

THE MILLING WORLD

AND

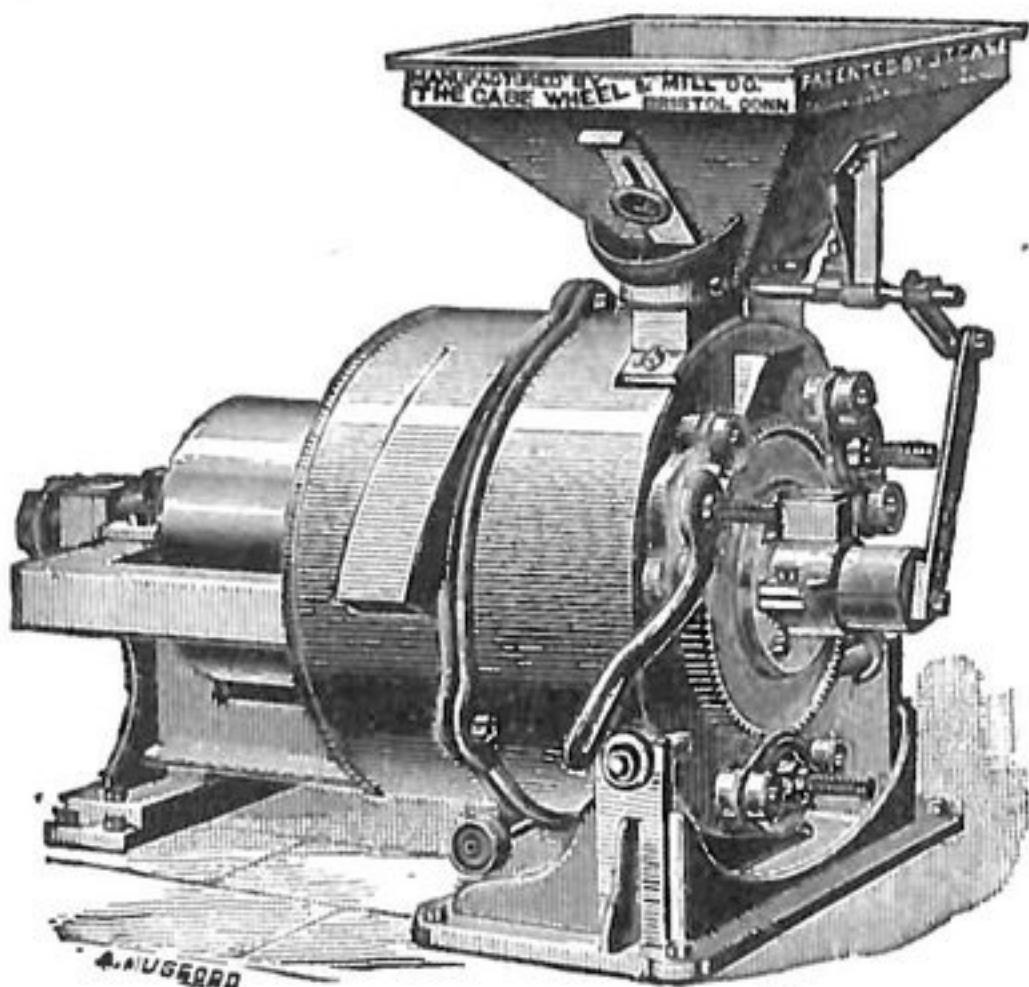
CHRONICLE OF THE GRAIN AND FLOUR TRADE

PUBLISHED EVERY MONDAY MORNING.

VOL. XX. No. 24.

BUFFALO, N. Y., AUGUST 12, 1889.

\$1.50 PER YEAR.



VICTORY OVER ALL OTHERS. SINGLE & DOUBLE VERTICAL GRINDING MILLS.

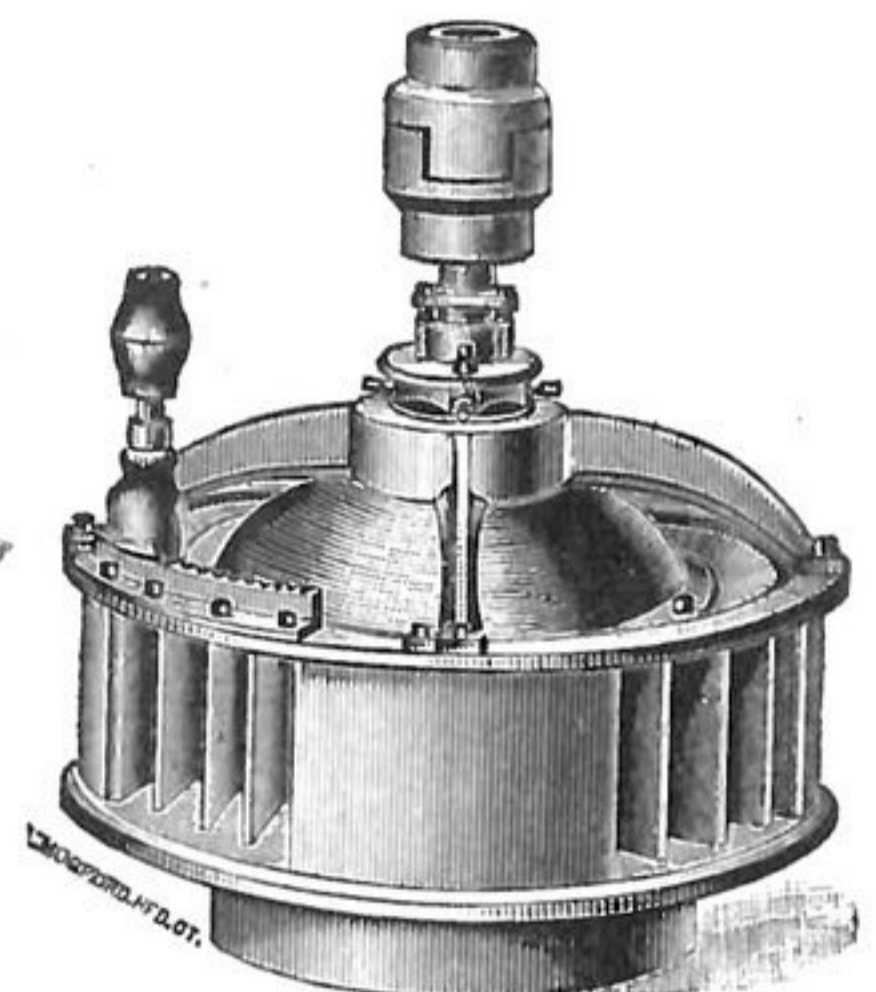
(J. T. CASE'S PATENT.)

FACTS ARE MIGHTIER THAN ASSERTIONS. READ WHAT THEY SAY:

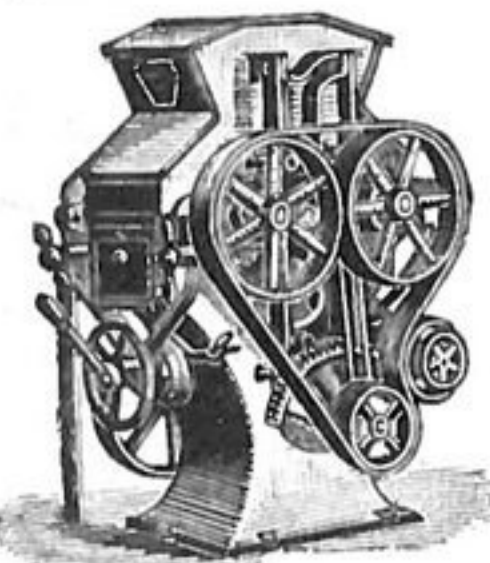
"Our 20-inch mill made by the Case Wheel & Mill Co. is in every respect satisfactory, easy to handle, and best results obtained of any mill in the country, with same quantity coal and power."—A. S. RUSSELL & Co., Meriden, Conn.
 "Superior to any mill in use."—GEO. WESTON, Bristol, Conn.
 "The best satisfaction in quantity and quality."—CHILD'S ELEVATOR, Manchester, Ct.
 "We take pleasure in recommending it."—GARLAND, LINCOLN & Co., Worcester, Mass.
SEND FOR CATALOGUE—ILLUSTRATED AND DESCRIPTIVE.

The Improved National Turbine Water Wheel

The Best for Economy; The Best for Durability; The Best for Power. ONE THOUSAND FIVE HUNDRED NATIONAL WATER WHEELS IN USE Prove that our Assertions are Supported by the Leading Manufacturers in the Country. Send for illustrated catalogue and prices to the manufacturers.



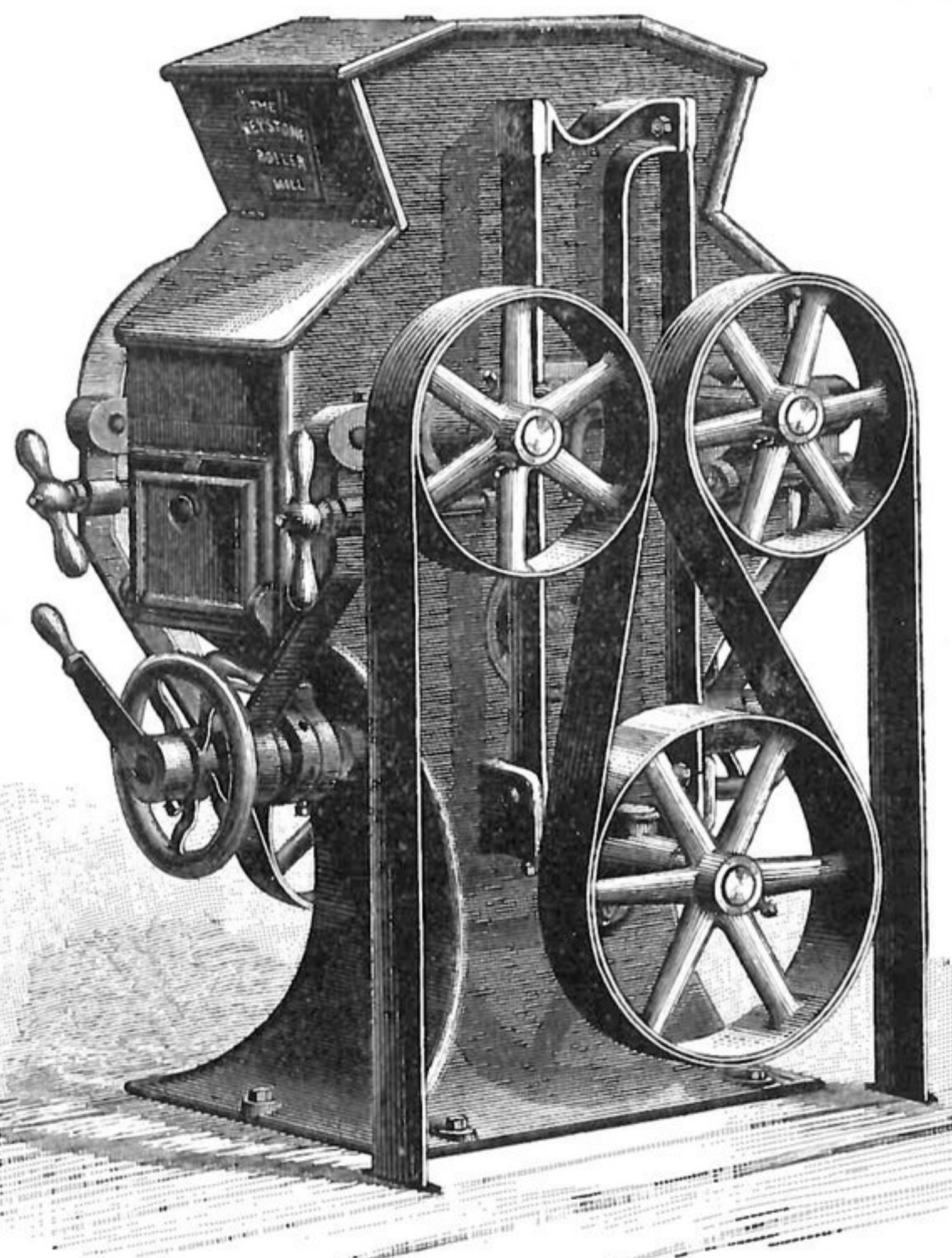
The Case Wheel & Mill Co., Bristol, Conn.



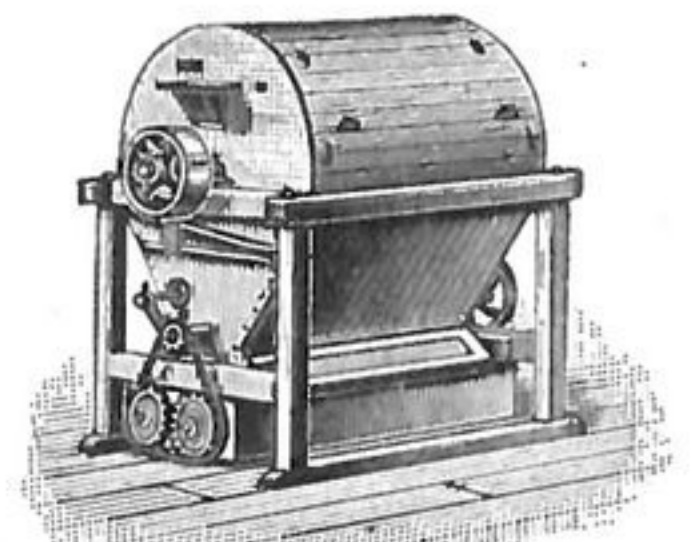
Wheat Roller Mill.

THE "KEYSTONE"

WHY IS IT THE BEST ROLLER MILL IN THE MARKET?



THE KEYSTONE FOUR ROLLER MILL.



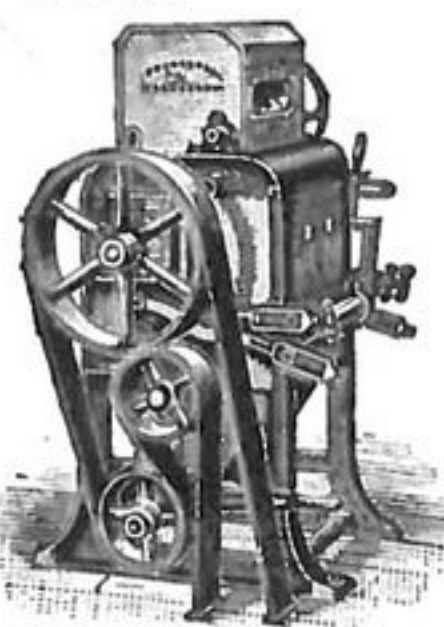
Bran Duster.

BECAUSE the adjustable roll is not pushed against its mate but is held rigidly to it, which takes out all vibration.
BECAUSE it does 25 per cent. more work than any other roll.
BECAUSE the heated air is taken out of the machine.
BECAUSE it has the best feeder.
BECAUSE it has no tremor.
BECAUSE it has the effect of a roll without springs.
BECAUSE it can be trammed in a quarter of a minute.
BECAUSE you can tram either end of the four rolls.

Also ask for prices on the only Noiseless Sieve Scalper, the "Allfree" Improved Purifier, "Climax" Bran Dusters, and "Allfree Flour Packer.

BECAUSE it runs 25 per cent. lighter than any other roll.
BECAUSE all bearings are universal and never get out of line.
BECAUSE you can throw the rolls apart from either side.
BECAUSE you can set both ends of the roll at the same time with one movement.
BECAUSE only one spring is used for both ends of rolls.
BECAUSE there is no slip to the differential.
BECAUSE no dust escapes from machine, all openings being covered.

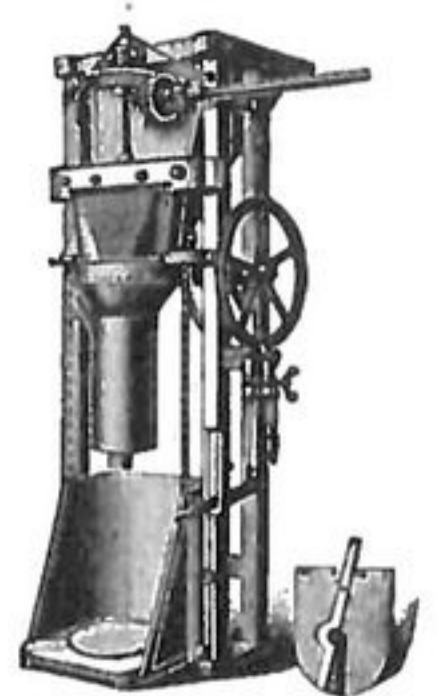
Also ask for prices on "Allfree" Centrifugal Reels, "Success" Bolter, Three Reduction Corn Mills, Latest Improved Designs.



Corn Mill.

Complete Outfits for Flour or Corn Meal Mills of any Capacity.
THE J. B. ALLFREE CO., INDIANAPOLIS, IND.

103 & 105 South Pennsylvania Street.



Flour Packer.

FIRE! FIRE!! FIRE!!!

Our entire works were destroyed by fire on the night of May 10th. Scarcely two hours after the workmen had left their day's work a fierce fire started which in less than two hours left our entire plant as complete a wreck as was ever witnessed. But like the

FABLED PHOENIX OF MYTHOLOGY

We have risen from our own ashes, and have erected a temporary machine shop above the ruins, and have it already furnished with power and new machinery for Re-Grinding and Re-Corrugating Rolls, together with Lathes and other machinery for doing general machine work. We have leased some Large Railroad Shops and an Extensive Wood-Working Factory so that we are now building Case Roller Mills, Purifiers, Inter-Elevator Flour Dressers and all our other machinery nearly as fast as ever.

OUR PATTERNS WERE SAVED

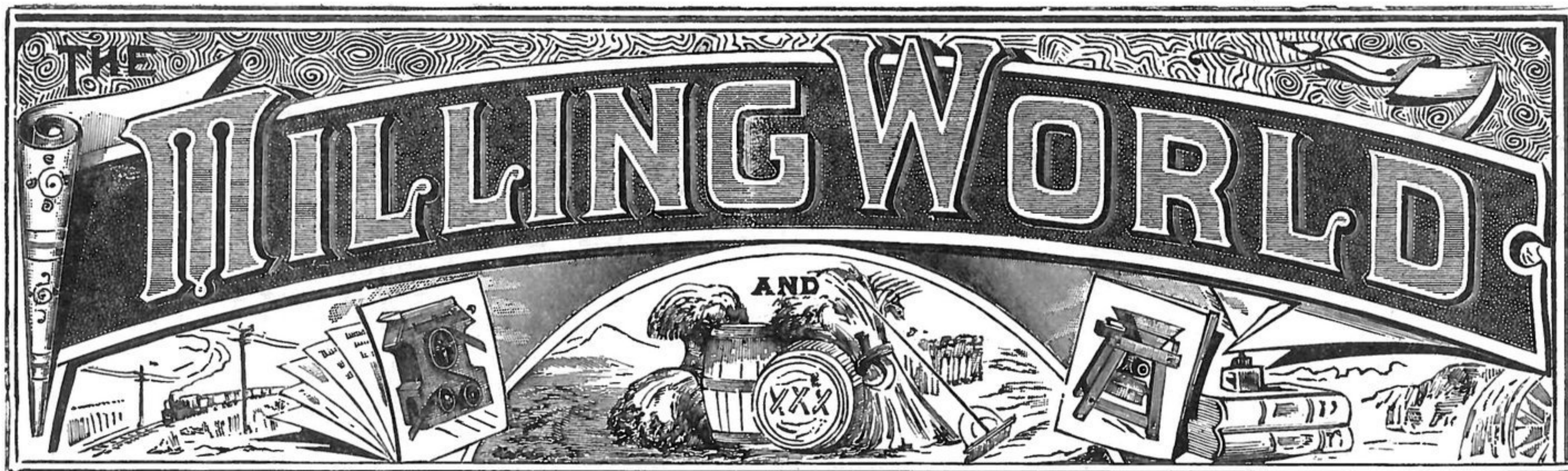
Also all our Plans, Flow Sheets, and the Records of our Business.

NEW AND EXTENSIVE WORKS

Will be erected at once on a large building site just purchased, and we intend to make our shops when completed the most convenient and best equipped plant in the country. We expect soon to get caught up with our orders, and will be in shape to contract for new work at an early date. We hereby tender our sincere thanks to our many friends for their letters of sympathy and good will, and also to those who have been patiently waiting for their machines until we could get in shape to make them. We assure all our friends that we shall still be in the field with Case machinery, and will be glad to answer all inquiries the same as ever, for we are still doing business at the old stand.

THE CASE MFG. CO., COLUMBUS, O.

PLEASE MENTION "THE MILLING WORLD."



CHRONICLE OF THE GRAIN AND FLOUR TRADE

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LATE reports seem to indicate a greatly improved condition in the spring-wheat section. Over in Canada they are claiming a "bumper crop" for Manitoba, at least 18,000,000 bushels some guessers are claiming for that province. We hope to see a good crop in both Dakota and Montana and Manitoba, but, unless the reports of drouth last month were wanton lies, it is impossible to consider the hope a rational one.

WHAT influence will the Millers' National Association exert, or attempt to exert, in the roller-mill litigation? Correspondents are asking this question. We reply to all correspondents that we know nothing whatever of the intentions of the association in that direction. It is certain that the connection between the Association and the consolidation, that is forcing the fight, might be a little less apparent than it seems to be now. The association will probably attempt to take care of itself, and it is so small that the job would seem to be an easy one.

RECENTLY an Ontario miller sent an agent down into the Maritime Provinces of Canada to drum trade. Wherever he went, he found American flour, much of which had been transported across Ontario, from American milling centers far west of that province, and it was sold at such rates that the Ontario millers could not compete. Such an instance confirms the complaint of the Canadian millers that their disproportionate tariff on grain and flour discriminates against them and in favor of the American millers. The lot of the Canadian millers is not just at present an enviable one. If things go on much longer as they are now going, the Canadian millers will have to come over the border, do their grinding here and ship the flour into Canada.

THE New York dictionary of the English language, called the "Century," contains over 200,000 words. Sarcastic individuals are inquiring what earthly use there can be of so many words, when the most voluble writer can find use for only 10,000 words at the most. Let these sarcastic and frivolous cavilers remain quiet. The extra 190,000 words are specially designed for the use of the milling editorial morologist of Minneapolis, who will employ them to tell all he does not know. Perhaps it would be more nearly correct to say a "part" of what he does not know, for it would require 17,000,000,000 words, all inflected and corrugated and ornamented on the luxurious Greek long-system method, to tell "all" that the Minneapolis morologist does not know about the Boards of Trade, wheat gambling, wheat milling and the flour industry in general. The "Century" will be but a beginning.

CERTAIN Canadian journals appear to think that there are many men in the United States whose whole time is occupied in devising schemes leading to the annexation of Canada. The Toronto "Empire" is one of these. It may not be amiss to say to such journals that annexation is not desired on this side the border, and that any proposition to take over the Dominion with its school troubles, its race troubles, its religious troubles and its commercial troubles would be more bitterly opposed on this side than it could possibly be on

the Canadian side. We are not at all averse to taking over all the able-bodied laborers, all the intelligent business men and all the most progressive citizens of the Dominion. They are welcome. The Dominion itself we do not want. Let the "Empire" and all its Tory cotemporaries turn their guns in some other direction. There are no annexation caribou or bugaboos on this preserve of Uncle Sam. Every thing in Canada worth having is coming over as fast as could be desired. Doubtless the "Empire" itself could find quite as large a circle of readers in Buffalo as it finds in Toronto. P. S.—If the "Empire" wishes to obtain possession of Erastus Wiman, it is welcome to take him and retain him.

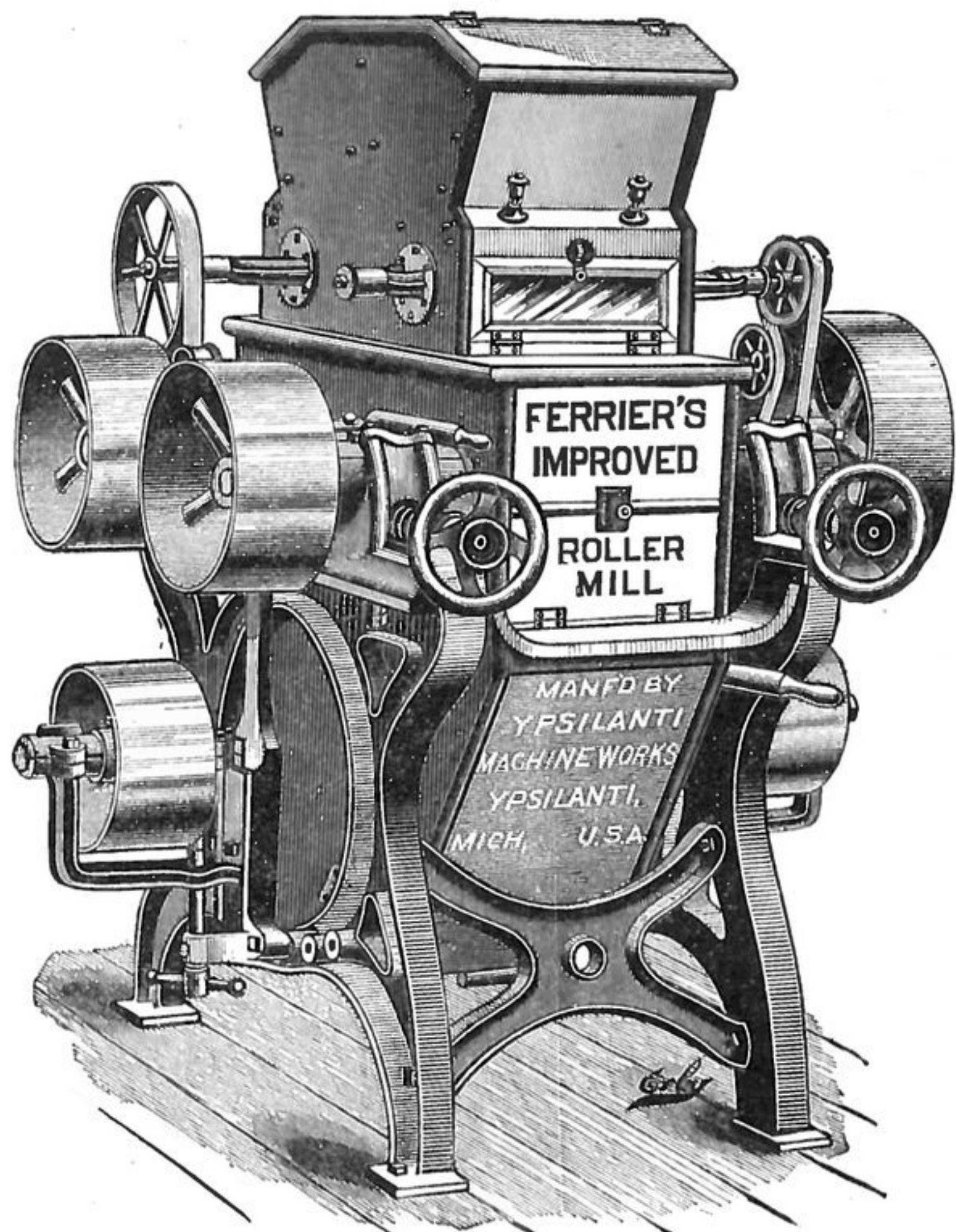
THE unnaturalized foreigners living and doing business in Boston have more "gall" than the law allows. At a recent session of the Senate Committee in that city those foreigners presented testimony to show "that the Canadian roads are not inimical to American interests generally; that they are strongly favorable to the interests of New England and the Northwest; that their practice was uniformly against rate cutting, discrimination and unfair competition; that these roads supply New England with food products better, more naturally and more cheaply than this section could be otherwise supplied, and that any legislation which would be hostile to these roads would be unfriendly to American interests." That is the view of the foreigners, many of them Canadians, concerning the railroad question. Every point they present is a false point. The Canadian roads, built for political purposes at the public expense and operated by large subsidies, are inimical to all American interests. They are of more harm than help to the northwest, because they are allowed to pirate the business created in that section by private American lines, thus depreciating American railroad properties by bringing private American enterprises into unrestricted competition with foreign subsidized enterprises. Their practice is and has been uniformly to cut below any rates and all rates made by American lines, as that is the only way in which they can secure any American business. How long is it since the Canadian Pacific openly announced its determination to smash the competing lines this side the border? In what single instance has that Canadian road yet failed to cut below any American rate? New England gets its food no cheaper now than when it was supplied only by American lines, as the records will show conclusively. No "legislation hostile to these Canadian roads" is proposed. All any patriotic American or sound business man demands is the protection of American private enterprises against the piracy of subsidized foreign enterprises. Any thing less than that will never satisfy the American sentiment, however the unnaturalized Canadians living in Boston and Portland may be affected, either in pocket or sentiment, by that protection. These loud-talking aliens do not stop to consider the question from the American point of view at all, and when they refer to their business as "American interests" they exceed all bounds of common-sense or courtesy. They plainly show their wish to see Canada built up at the expense of the United States, and that wish lies at the base of all their grotesque misrepresentations to the Senate Committee.

YPSILANTI MACHINE WORKS, YPSILANTI, MICH.

MILL BUILDERS

And Manufacturers of

FLOUR MILL MACHINERY



Sizes of Ferrier's Improved Four-Roller Mills.

6x12	6x15	6x20
9x15	9x18	9x24

YPSILANTI MACHINE WORKS, YPSILANTI, MICH.

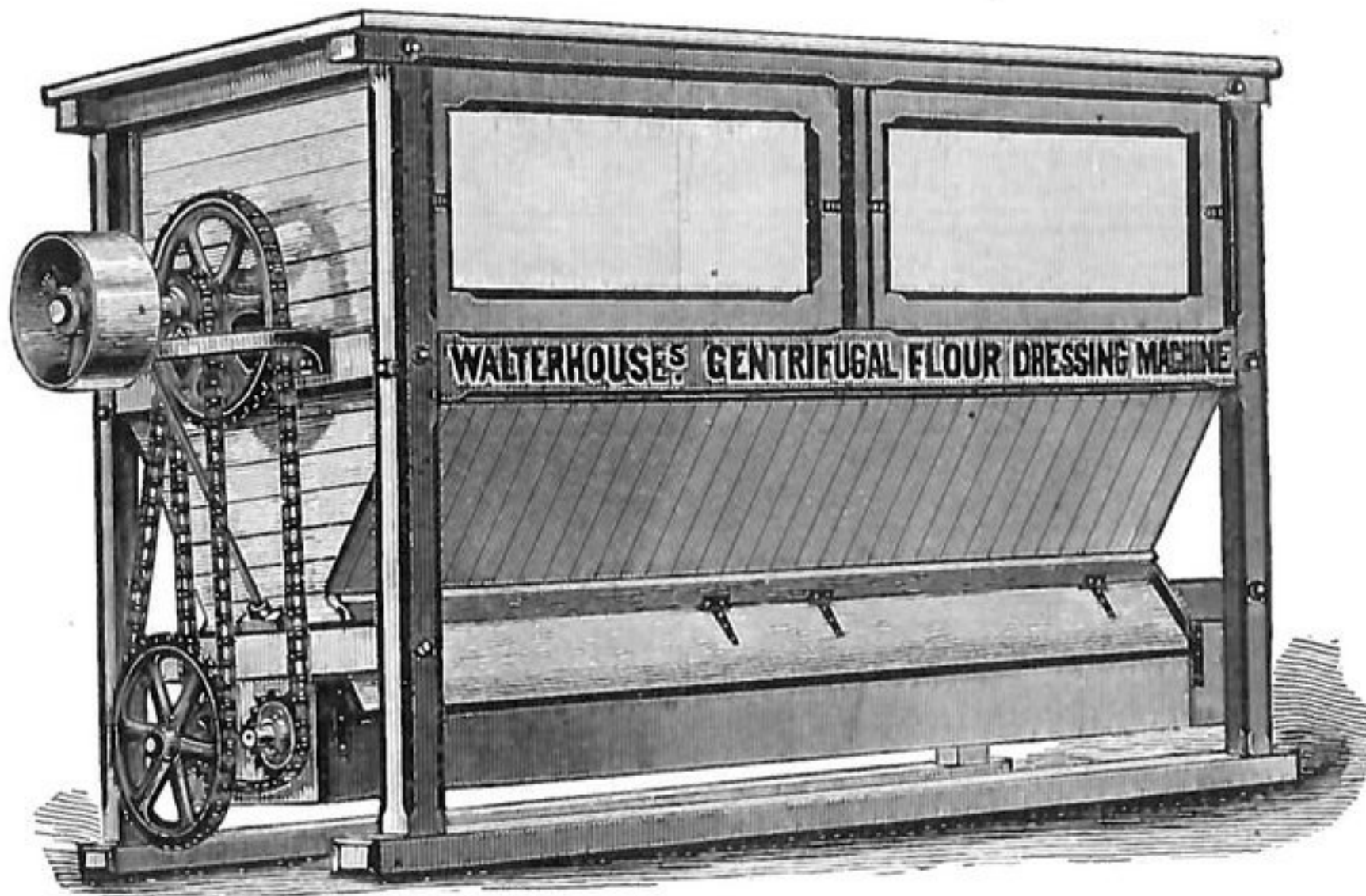
Gentlemen: We have had a line of your "Roller Mills" in use for over two years, and they have given entire satisfaction in every respect. They work like a charm, and their ease of adjustment and solid structure, together with the excellent finish you give them, can but recommend your machines to the milling public.

Yours respectfully,

A. R. DICKINSON & CO.

NASHVILLE, TENN., MAY 3, 1889.

Dealers in Bolting Cloth. Walterhouse's Centrifugals; Walterhouse's Slow-Running Flour Dresser with Inside Cylinder; Plain Round Reels; Scalpers, Bolting Screens, Etc., Etc., Etc.



JOHN ORFF, PROPRIETOR OF
EMPIRE FLOURING MILLS.
FORT WAYNE, IND., APRIL 10, 1889.

YPSILANTI MACHINE WORKS, YPSILANTI, MICH.

Gentlemen: The Centrifugal Reel bought from you some time ago is doing its work complete in every respect. It does a large amount of work, and does it well. Should we make further changes in bolting, shall use more of them. Wishing you success, we remain,

Respectfully,

JOHN ORFF.

OFFICE OF LEXINGTON MILL CO.,
LEXINGTON, MICH., JAN. 22, 1889.

To YPSILANTI MACHINE WORKS.

Gents: In reply to yours of June 5th, would say that we are well pleased with our mill. It has more than met our expectations. Although it was feared that the six-inch rolls would not prove a success, we find them to be complete in every respect. We are making as fine a flour as there is made in the state, and we guarantee our patent to be equal to Minnesota Patent. The mill has given us no trouble whatever since we started it, and for plan and workmanship, your Mr. G. Walterhouse deserves great credit. If your friends doubt it would be pleased to have them come and see for themselves.

Yours respectfully,

LEXINGTON MILL CO.

Dawson's Roller Mill

Is acknowledged to be the very best in the market. It has our Patent Automatic Centrifugal feeder, never failing to feed the stock the full length of rolls in an even sheet. It is the Latest and Best feed out, uses less power and is simple in construction. It can be placed on any style of machine with little expense. We use for roll bearings phosphor-bronze metal which will admit rolls being run at any speed without heating and with little friction, and uses little oil. We use the Dawson Corrugation, which is admitted the best in long or short system mills as the action is granulating rather than CUTTING.

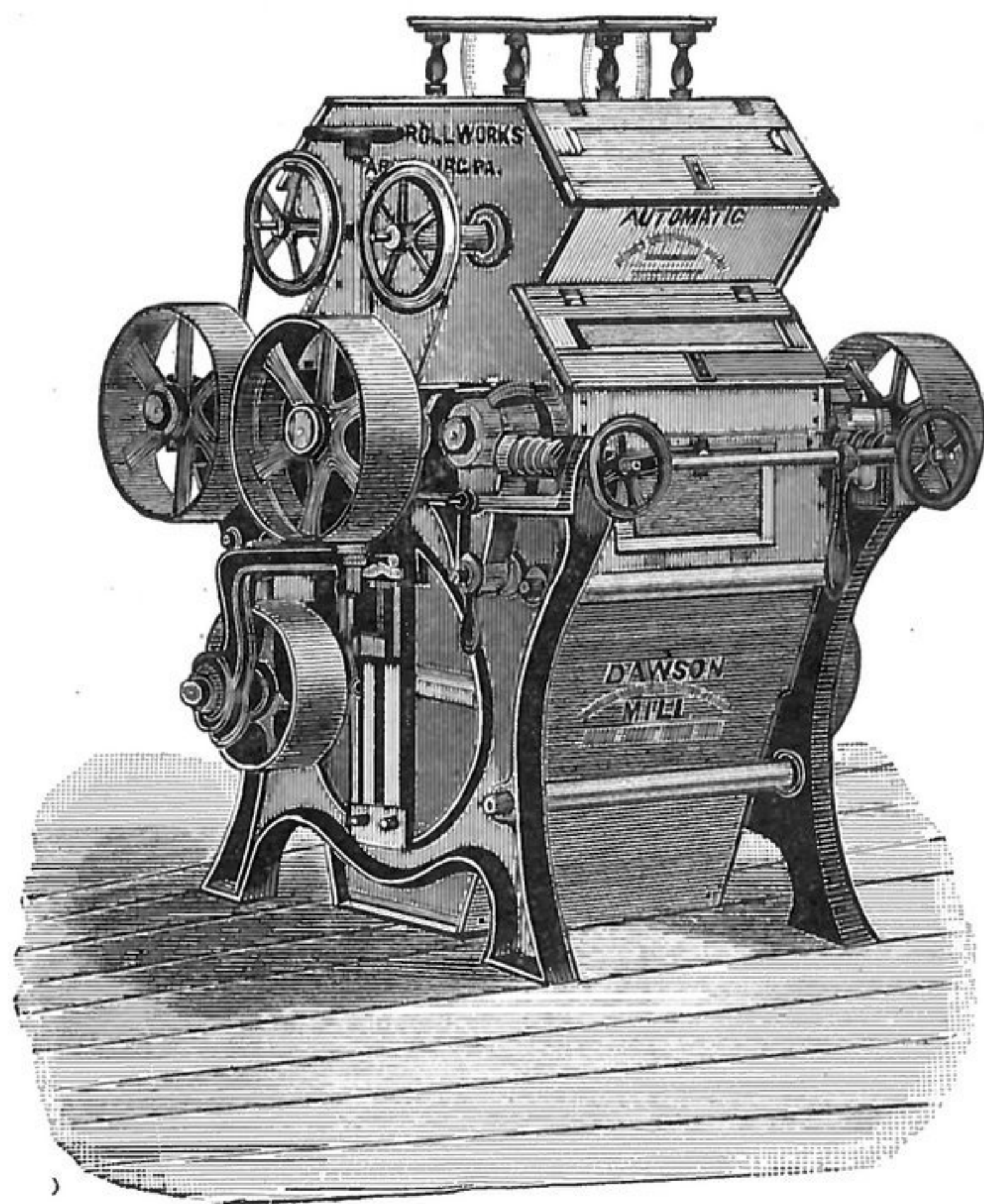
We have a large plant to Re-grind and Re-Corrugate Rolls.

Owing to our late increased facilities and central location we are enabled to ship goods promptly on the shortest notice.

PARTIES CONTEMPLATING REMODELING THEIR MILLS OR BUYING ANY ROLLER MACHINES ARE REQUESTED TO PUT THEMSELVES IN CORRESPONDENCE WITH US.

FOR PRICE LISTS AND CIRCULARS, ADDRESS,

Dawson Roll Works, Harrisburg, Pa.





PUBLISHED EVERY MONDAY. OFFICES: { Corner Pearl and Seneca Streets,
Over Bank of Attica.
McFAUL & NOLAN, -- -- PROPRIETORS.
THOMAS MC FAUL. JAMES NOLAN.

SUBSCRIPTION.

In the United States and Canada, postage prepaid, \$1.50 Per Year, in advance; remit by Postal Order, Registered Letter, or New York Exchange. Currency in un-registered letter at sender's risk.

To all Foreign Countries embraced in the General Postal Union, \$2.25 Per Year, in advance.

Subscribers can have the mailing address of their paper changed as often as they desire. Send both old and new addresses. Those who fail to receive their papers promptly will please notify at once.

ADVERTISING.

Rates for ordinary advertising made known on application.

Advertisements of Mills for Sale or to Rent; Partners, Help or Situation Wanted, or of a similar character One cent per word each insertion, or where four consecutive insertions are ordered at once, the charge will be Three cents per word. No advertisements taken for less than 25 cents. Cash must accompany all orders for advertisements of this class.

Orders for new advertisements should reach this office on Friday morning to insure immediate insertion. Changes for current advertisements should be sent so as to reach this office on Saturday morning.

EDITOR'S ANNOUNCEMENTS.

Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with a millfurnishing house and aims to represent the trade without prejudice, fear or favor.

Address all communications

THE MILLING WORLD, BUFFALO, N. Y.

Entered at the Post Office, at Buffalo, N. Y., as mail matter of second-class.

SITUATIONS WANTED.

Advertisements under this head, 25 cents each insertion for 25 words, and 1 cent for each additional word. Cash with order. Four consecutive insertions will be given for the price of three.

WANTED.

A situation with parties who appreciate good work, with rolls or buhrs on patents. Have the following recommendation from Miller Bros., Forest Grove, Ore., dated Nov. 10, 1887: "To whom it may concern: This is to certify that Peter Provost has been in our employ as head miller, and has given entire satisfaction. We believe him to be a very competent man, and cheerfully recommend him to the milling public." State wages you wish to pay. Address, PETER PROVOST, Menominee, Mich. 21

SPECIAL ADVERTISEMENTS.

Advertisements of Mills for Sale or Rent, Partners Wanted, Machines for Sale or Exchange, etc., etc., cost 1 cent per word, for one insertion, or 3 cents per word for four insertions. No order taken for less than 25 cents for one insertion, or 50 cents for four insertions. Cash must accompany the order. When replies are ordered sent care of this office, 10 cents must be added to pay postage.

WANTED.

A miller with some capital to help stock with, to take charge and run my mill. Address LOCK BOX 265, Clearfield, Clearfield county, Pa 1720

FOR SALE.

Flour-mill, corn-mill and cotton-gin, in a new growing country, splendid for wheat. Good opening for a mill-man who understands the business. For particulars apply to W. J. MILLER & CO., Ballinger, Texas. 2023

FOR SALE.

Several good second-hand and new turbines of various styles. Second-hand price list and descriptive matter and prices of our new machines sent free. Every one interested in the shortest route to successful milling on rolls or in grinding corn and feed with the least expense of power, should address us before buying.

FLENNIKEN TURBINE CO.,
Dubuque, Iowa.

8tf

MILL MACHINERY FOR SALE.

One No. 0 Standard Combined Separator, Smutter and Brush Machine; new, best make.
One 20-Inch Under-Runner Portable Mill, French Buhr Stone; capacity 10 to 12 bushels per hour; new, best make.
One 14-Inch Vertical Feed Mill; best make, new, a bargain.
One No. 6 Dustless Separator; new, a bargain.
One No. 1 Full Rigged Combined Dustless Separator; new, a bargain.
Four Corn Cob Crushers, right or left hand, driven from above or below, best make; capacity 40 to 60 bushels per hour.
Three No. 1 Corn Shellers, capacity 200 to 300 bushels per hour; new.
One No. 2 Purifier. New. Best make. A bargain.
For particulars address, FRANK SMITH, care of THE MILLING WORLD, Buffalo, N. Y. 5tf

M-I-L-L-E-R-S

Wanting Bolting Cloths should write for discounts on same before purchasing elsewhere to
SAMUEL CAREY,
17 Broadway, New York.

WANTED.

A good buhr miller, that thoroughly understands his business, to run a custom mill. Must be a sober, industrious man. State age, how long at the business, whether married or not, and best terms for steady employment. Give references. Address BEACH, BROWN & CO., Montrose, Pa. 2223

THE winter-wheat millers are rolling in clover. The new wheat is abundant and of a very high quality. The work of making flour from it is mere picnic diversion. The tug of war will come with the work of selling the flour.

MINNEAPOLIS making a raid on Boards of Trade and other speculative establishments in general inevitably suggests the old saw about Satan rebuking sin. It also recalls the old doggerel:

"The devil got sick, and the devil a monk would be;
The devil got well, and the devil a monk was he."

Now and then a French writer turns up and announces that the day of the exit of the rolls and of the re-entrance of the buhr is near at hand. That announcement is perfectly natural in a country of 37,000,000 inhabitants that can show only 65 or 70 modern-process milling establishments, but it sounds absurd to the millers of other countries in which modern methods are firmly established.

EACH month of this season keeps up the bad record of the year for violent storms, great floods, hail, drouth, loss of life and serious damages to crops of all kinds, which began in the Southern Hemisphere last December and came northward with the sun. The disasters of 1888 and 1889 will be long remembered, and the grain-growers and millers the world over will do their share of the remembering.

MINNEAPOLIS morology on milling matters continues to excite amusement. The gamblers' favorite in that city is frothing in holy rabies and anguished indignation over the Boards of Trade in various cities. It is fairly clawing the stars out of the sky and racking the fastenings of the solar system in its exhibitions of fantastic stage morality. Since when has speculation become to the Minneapolis bulls and bears what the red rag is to the common ten-acre-lot bull?

THOSE wheat-crop maniacs, who last season came within 100,000,000 bushels on their "estimates" of the crop, are again at it. The estimates up to date range from 430,000,000 to 525,000,000 bushels for the United States crop of 1889. As those limits are 95,000,000 bushels apart, there is a good chance for prophetic-gymnastics between the stakes. Last year no single prophet got within 40,000,000 bushels of the total crop, and this year they are in a fair way to err even more wildly than they did last year.

ALARMISTS pretend to think that it will be a "bad thing" for the grain and flour trade of the United States to have British capitalists buy in large milling and elevator interests. It may be a "bad thing," but we think it will be so only to the British buyers. All the loose money in Great Britain would not suffice to buy a controlling interest in the grain and flour business here. Suppose the wheat crop is 475,000,000 bushels. It would require at least \$300,000,000 to get control of the crop. Suppose the mills of the country to be worth \$600,000,000. It would require \$400,000,000 to buy control of them. The grain and the mills would call for about \$700,000,000 to get and hold control. No such amount is at all likely to come in. Besides all this, while the incomers would be "learning the ways" of the Yankees, the Yankees would be making things very interesting for the Britons. Imagine the Britons involved in a "boost," a "squeeze," a "corner," or any other flambergasted form of Yankee gambling deviltry! What would they do? What could they do? The alarmists should not get shot in their nerve-centers before the British gun is even loaded. If the Britons do come in and make large investments and attempt to manage things, they may acquire some new and startling ideas of that "Yankee cuteness" which they have so long ridiculed.

POINTS IN MILLING.

KICKERS will kick at all times, and it is not surprising that they have at this early day turned their heels upon the new wheat grain. Ordinary observers have considered the new grain a very fine article, large, plump, smooth, free from wrinkle and in every way nearly perfect, but now come the kickers, and they say: "Yes, this new grain is plump, but it is not plump enough. It is too plump. Its extra plumpness is caused by the presence of too much starch. The trouble with such plump wheat is that the starch is in excess of the gluten. The flour will be beautifully white, but it will not be so strong as that made from wheat less plump, in which the starch and gluten are mixed in better proportions. After all, this large crop will not be much more profitable for the millers than the last poor and inferior crop was."

In other words, the kickers would make it appear that the present large crop of fine, smooth, easily-ground wheat will be as unsatisfactory to the millers as was the small crop of rough and inferior wheat of last year. I do not believe that the millers and bakers can be kicked into believing any thing of that sort. Until some chemist has been called upon to determine scientifically the want of gluten and the superabundance of starch in the grain of this crop, I shall maintain that it is wrong to spread the daily newspaper fake about starch and gluten, for it is up to date only a fake. It is a libel on the crop. It should be tabooed.

THE agents of the mill-building houses are having a regular cutthroat picnic this year. It would surprise the average miller, whose mill was built and equipped some other year, to learn the figures at which mills are being built and equipped this year. Some of these over-competition establishments will probably prove satisfactory to the owners, but many of them will not.

THE miller who jears down a builder or furnisher below a fair-profit notch will find in the end that he has not saved all the extra dollars knocked off the first cost of his plant. If he has tried to make a contractor give him something for which he has not paid, he must not be surprised in the long run to find that he has paid for more than he has got, after all. He will find that he has paid out just enough money to get a very unsatisfactory mill.

IF AN owner sets the rival agents to cross-fighting over himself, he must expect to receive a fair share of the wounds. Whether he expects it or not, he will get his share. Next to a mill fitted up with second-hand and worn-out machinery must be ranked, for worthlessness, the mill fitted up and built under the severe stress of competition. I know some mills of both classes, and in work they are so near alike that there is small choice between them.

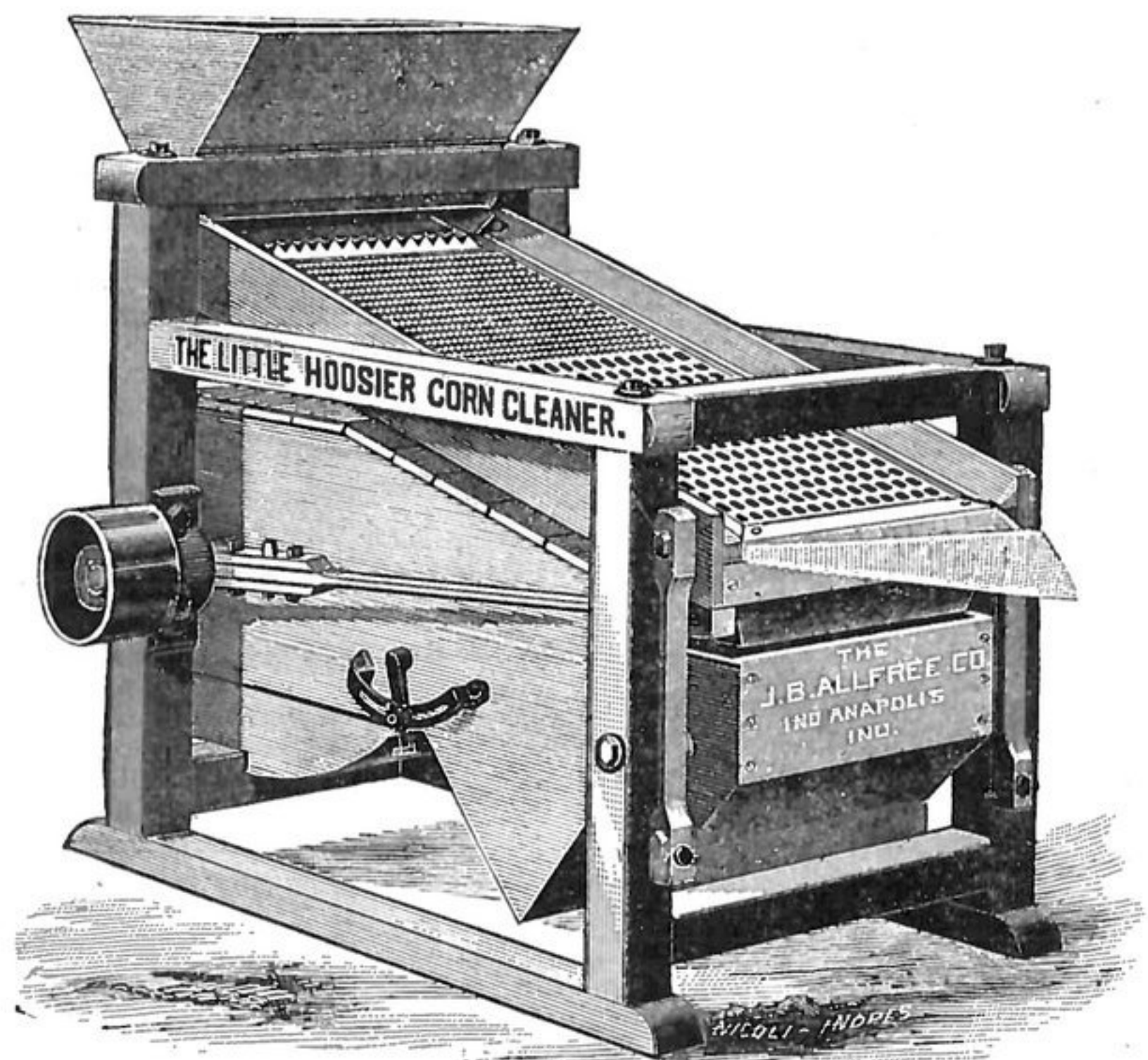
It is encouraging to note the interest shown by the Agricultural Department in the wheat question. As this country is the greatest single wheat-producer in the world, and as the wide domain gives room for all varieties of spring and winter wheat, it is well that each state or section should grow just the variety best adapted to it, and no other. If the department can settle authoritatively just which is the best grain for each section, it will be a great step in the right direction. Varying soil and climatic conditions may call for different varieties in Dakota and California, in New York and Oregon, in Pennsylvania and Washington. It ought to be an easy matter to settle definitely what wheat is best for any wheat-growing area. The government experiments will determine where the proper varieties are already sown and where new varieties are desirable. The next step will be the change, wherever a change is needed, from the old to the new.

AMERICAN mill-machinery men have missed a grand opportunity for displaying their machines at the Paris Exposition. The millions who are visiting that great exhibition

will inspect with care the machinery shown, and a full display of the leading American machines for making flour would attract a great deal of attention. France itself ought to be a good field for milling progress, as it is yet undeniably far in the rear, with its water-mills, its horse-mills, and its buhr-mills which are still in the large majority. So meager is the display of American things at the Paris fair, that not much good may reasonably be expected to come from it. If New York opens the world's fair in 1892, which is now proposed, the mill-machinery manufacturers of the United States ought once in their lives to make a creditable show of their wonderful machines. An American fair can hardly be so valuable for them as a European fair, for the reason that American visitors, who will be in the majority, already patronize these manufacturers. Nevertheless, a big fair in 1892 will be a good place to make a full display of American milling machinery.

THE "LITTLE HOOSIER" CORN CLEANER.

Among the many excellent machines manufactured by the J. B. Allfree Company, Indianapolis, Ind., is the "Little Hoosier" corn-cleaner, which is illustrated in the engraving herewith. Every miller knows the great importance of cleaning corn thoroughly, and every one is interested in find-



THE "LITTLE HOOSIER" CORN CLEANER.

ing a cleaner that does its work well and economically. Such a machine is the "Little Hoosier." The height of this cleaner is 3 feet 8 inches, the length is 4 feet 6 inches, and the width of the frame is 2 feet 4 inches. Its capacity is 15 to 25 bushels per hour, and the work is well done. Address the makers for discounts and all desired information concerning this and their other superior milling machines.

ENGLISH CRITICS ASTRAY.

Our esteemed New York cotemporary, "The Scientific American," has the laugh on some of our British cotemporaries. The European correspondent of our cotemporary is Mr. Joshua Rose, who is writing a series of attractive letters from the Paris Exposition. In some of these letters Mr. Rose has commented on the surprising extent to which British and Continental machine-builders have copied American ideas in machinery, and particularly the British builders. An English trade journal "picks up" Mr. Rose, denies his statements as far as it dares to, and winds up by styling him "the intelligent Yankee," "our American critic" and "the Great Pajandrum." It caps the climax by screaming: "It is well that all our American critics are not wrapped up in such utter and monstrous conceit as this representative of the 'Scientific American' in Paris!" The laugh comes in when it is announced that Mr. Rose is not a Yankee or an American, either intelligent, self-conceited, wise or otherwise, that he was born in England, that he was reared in England, and that he spent his whole life in England, with the exception of a short time spent in the United States, where he learned enough of American

machine-building to be able to point out the piracy of American ideas by British and European builders. His fellow-Englishmen may now go behind the nearest doors and kick themselves, while Mr. Rose goes on and exposes their piracy.

VARIATIONS IN THE PRICE OF WHEAT.

Variations in the value of the wheat exported from the United States during the past seventy years are shown in the following table, taken from the reports of the Agricultural Department, the price being for a bushel:

Year.	Price.	Year.	Price.	Year.	Price.
1818.....	\$2.00	1842.....	\$1.120	1865.....	\$1.942
1819.....	1.26	1843.....	.850	1866.....	1.406
1820.....	.75	1844.....	.900	1867.....	1.273
1821.....	.81	1845.....	.860	1868.....	1.899
1822.....	.70	1846.....	1.040	1869.....	1.409
1823.....	1.32	1847.....	1.370	1870.....	1.289
1824.....	1.02	1848.....	1.310	1871.....	1.316
1825.....	1.03	1849.....	1.440	1872.....	1.473
1826.....	.86	1850.....	1.060	1873.....	1.312
1827.....	.67	1851.....	1.000	1874.....	1.428
1828.....	.76	1852.....	.950	1875.....	1.124
1829.....	1.59	1853.....	1.120	1876.....	1.242
1830.....	1.02	1854.....	1.550	1877.....	1.169
1831.....	1.30	1855.....	1.660	1878.....	1.338
1832.....	1.06	1856.....	1.850	1879.....	1.068
1833.....	.92	1857.....	1.530	1880.....	1.243
1834.....	1.07	1858.....	1.020	1881.....	1.113
1835.....	1.08	1859.....	.950	1882.....	1.185
1836.....	1.00	1860.....	.981	1883.....	1.127
1837.....	1.57	1861.....	1.226	1884.....	1.066
1838.....	1.29	1862.....	1.144	1885.....	.862
1839.....	1.50	1863.....	1.293	1886.....	.870
1840.....	.95	1864.....	1.327	1887.....	.890
1841.....	.95				

MILLING PATENTS.

Among the patents granted July 30, 1889, are the following:

Henry Lippold, jr., Corry, Pa., No. 407,829, a corn-sheller.

Jas. F. Winchell, Springfield, O., No. 307,885, a feeding-crusher for crushing and grinding mills, assigned to the Foos Mfg. Co., same place.

Wm. H. Sprague, Horwich, County of Lancaster, England, No. 407,907, an apparatus for drawing off and mixing the grain from elevators.

John M. Case, Columbus, O., No. 407,948, a dust-collector for middlings-purifiers, and 407,949, a dust-collector, both assigned to the Case Mfg. Co., same place.

Wm. F. Kehm, Mason City, Ia., No. 407,956, a grain-separator.

Wilson Ager, Bloomsburg, Pa., No. 408,063, a method of scouring and decorticating cereals.

Eugene Bretney, Indianapolis, Ind., No. 408,074, a dust-collector.

Gustav Adolph Buchholtz, Frankfort-on-the-Main, Prussia, Germany, No. 408,077, a grain hulling and reducing machine, one-third assigned by administrator of the dead inventor to James Underhill Robertson, New York, N. Y.

Joseph W. Wilson, Brookville, Kans., No. 408,156, a feed-regulator for roller-mills.

Francis H. Richards, Hartford, Conn., No. 408,192, a stop-motion register for grain-scales.

THE MAIN UPRIGHT SHAFT.

Every man who has ever had any experience with old-style flour-mills, especially of the smaller kind known as custom or grist mills, is aware that a certain abominable feature in the way of what is called the main upright shaft is found in nearly if not quite all of them. The main upright is noisy and a great nuisance. It makes extra work for the power plant to perform and causes a great deal of unnecessary wear and tear, makes trouble all the time after a mill has run a few years, and ought not to have an existence in a flour or any other kind of a mill; and indeed, so far as is known to the writer, it can not be found in any kind of a mill or manufactory save and except a flour-mill. Two years ago I was called upon to investigate an old mill with the view of changing it to a system that would make good flour that

could be disposed of. The owners of the mill had no knowledge of the business, nor had they a great deal of money, but they were obliged to have the mill in shape to make an acceptable flour or quit business. It was an old and badly arranged mill in every way, with one of the worst cases of main upright I had ever seen. However, knowing the circumstances and condition of the owners, I ignored the bad mechanical features, including the main upright. Knowing that as they had stood the racket so long, they could stand it awhile longer without danger of any of them being sent to the insane asylum, I proceeded to make the other necessary changes for making first-class flour.

In that we proved to be very successful; and after the mill had run about a year the owners began to be restless about some of the bad machinery arrangements, and especially the main upright, and were desirous of getting rid of it. It was easy enough to do by re-arranging the machinery of the mill, but that they did not want to do because of the great expense attached. The object was to do it without changing the positions of any of the bolting-chests, which could not be done any way for want of room, or of any other machines. The main line of shafting in the basement, which was a continuation of the crank-shaft of the engine, projected beyond the last gallows-frame which supported it just far enough to get on a bevel cog-wheel, which geared into another on the upright and drove it. Next to the engine, the mill-wall intervening, was a pulley that had been used for driving buhrs, that we wanted to use for a belt to run up stairs in place of the upright, but the stairways were in that end of the mill, and there was no other convenient place for them; and besides the main line of shafting in the second story did not reach to within about 16 feet of that end of the mill, and there was nothing to hitch to without lengthening out the shaft, in the way of which there was some obstruction.

Owing to the difficulties in the way, the idea of running the belt up there was abandoned, and the locality of the upright, which was in about the center of the mill, was investigated. But the shaft projected at that end far enough to get a cog-wheel on, but not far enough to get on a twelve-inch pulley; besides, the shaft had to be lengthened out for the purpose of driving a heavy warehouse corn-sheller, which had been driven by a counter running out from the upright, and the projecting end had to be used for a coupling for connecting the extension. The bore in the pulley was $4\frac{1}{2}$ inches, consequently the new extension of the main shaft could not be made to fit it because of requiring it to be much too large and expensive to drive a sheller. To overcome that trouble we had a coupling made to order, with the hub on one side made 12 inches long and turned to fit the pulley, while the other side of the coupling was made to fit on the end of the old line. We then had the pulley hung on the coupling instead of the shaft, as ordinarily. A very novel, but in that case a very effective and convenient way of doing it. A $2\frac{1}{2}$ -inch extension-shaft was inserted in the long hub of the coupling to drive the sheller with, and that part of the job was completed. After a shifting of conveyor-boxes and some other minor changes, which had to be calculated on, the belt was run up through the mill to the main line above, and thence by chain-belt we connected with a line in the upper part of the mill, which was already connected with the principal elevator-shaft and others, and the job was virtually completed. There were some other slight changes to make, which were easily made, when all was complete and the mill ready to go again.

By comparison with what had been, the mill ran as free from noise as a Sunday school is supposed to be when the superintendent is addressing the scholars. In the basement there had been two pairs of heavy and noisy gear-wheels, one pair for driving the upright and another pair for driving a corn-sheller, with a capacity of 500 bushels per hour. Both of those were dispensed with by the change, and the sheller was driven by belt from the main shaft by introducing a counter to raise speed and get belts long enough. Those two pairs of wheels were extremely noisy, almost deafening, besides making the building tremble. There were several other pairs dispensed with in the upper stories of the mill,

and everywhere was peace and quiet, against uproar and confusion before. That was not all. The miller could keep the mill running without being in constant fear of a wheel slipping out of gear somewhere and causing no end of trouble, as had frequently been the case previously, and is liable to be the case wherever upright shafts are found loaded down with gear-wheels.

I have detailed this particular case as a practical lesson for the benefit of others who may be in a like fix and want to find an easy way out. It is not likely that exactly the same kind of a combination will be found, but all are somewhat similar, and with some ideas as a starter, a little careful thinking will soon solve the problem. The natural place for the upright belt is at the power-end of the mill, and the first thought will be to locate it there. But there may, in an old mill, be too many obstacles in the way of putting it there, and, thinking there is no other place for it, many will give up the project entirely and let the mill run on in the old noisy and destructive way. But they should not do that; look along the lines of shafting and see if another place for connecting them can not be found. There will probably be obstructions everywhere; but select the place where fewest appear, and the least work and expense are required to get the belt in place. They may think that anywhere else it will be too much in the way; but in the case I have referred to it is less in the way than anywhere else it could have been put.—*R. James Abernathy in "The Mechanical News."*

MAKING CORN INTO GLUCOSE.

Following is the method of converting Indian corn into glucose: The shelled corn is first soaked for several days in water, to soften the hull and prepare it for the cracking process. The softened corn is conveyed by elevators to one of the highest stories of the factory and is there shoveled into large hoppers, from which it passes into mills that merely crack the grains without reducing them at once to a fine meal. The cracked meal is then conducted to a large tank filled with rinsing-water. The hulls of the corn float at the top of the water, the germs sink to the bottom, and the portions of the grain containing the starch, becoming gradually reduced to flour by friction, are held in solution in the water. By an ingenious process both the hulls and germs are removed, and the flour part held in solution contains nothing but starch and gluten. The gluten is then made to flow over a series of tables representing several acres in area, and the difference in the specific gravity of the two substances causes the gluten and starch to separate without the use of chemicals. The gluten is of a golden yellow color and the starch a snow white. By the time the gluten has been completely eliminated, the starch assumes a plastic form and is collected from the separating tables by wheelbarrows and taken to a drying-room, where it is prepared as the starch of commerce, or it is placed in a chemical apparatus to be converted into glucose.

EXPERIMENTING ON NEW WHEATS.

According to announcement from Washington the Department of Agriculture is making arrangements for the introduction in this country of new varieties of wheat to take the place of those which have deteriorated. Assistant Secretary Willetts, who has charge of the work, has written to the agent of the United States at Paris, France, and directed him to look over the field carefully and secure some of the wheat which in his judgment would be the best for the purpose. He will pay particular attention to Mediterranean wheats, some of which have been used in this country before to very good advantage, but of which the stock has fallen from its former productiveness and quality. It is very desirable that a new Mediterranean wheat be introduced into the United States. Mr. Willetts is in correspondence with the Russian Government also upon the subject of wheats. He expects to secure supplies of some of the best wheats of Russia and of a Mediterranean wheat for distribution for the fall planting. The quantity expected will not be large, and therefore its distribution will not be general throughout

the country. It will be sent to the agricultural stations and to the leading farmers in the several states, farmers who will take every care in planting the seed sent them, closely observe its growth and report to the Department upon it. By this means the Department will be able to act next year from actual experience with the new wheats.

Mr. Willetts says the history of grain shows that it will deteriorate in time in one section from natural causes, and by becoming mixed with other varieties of the same grain, and that a change of wheat from one locality to another, bearing in mind the climate and other conditions, would be found advisable. Mr. Willetts agrees with the Department's European agent in thinking that the full fat berry makes the best or most productive wheat. The Agricultural Department's European agent is Monsieur Vilmorin, who has devoted all his life to wheat-growing and the improvement of wheat. He has a great love for his work. His father, grandfather, and great-grandfather spent their lives at the same work, and for more than a century the Vilmorins have been considered authority on wheat. With such aid it seems that the Department of Agriculture ought to be able to procure the best varieties of wheat suitable for cultivation in this country.

NO ALUM WANTED IN MINNESOTA.

Minnesota takes the lead against the alum abomination in bread. The Legislature of that state has passed a law, which took effect August 1, 1889, which prohibits the manufacture of baking-powder containing alum, and makes either the manufacture or sale of, or the having in possession, baking-powder containing alum a criminal offense, punishable by fine or imprisonment, unless such article is plainly marked with the name and address of the manufacturer and the words "This Baking Powder contains Alum." The following is the main provision of the law: "An act in relation to the manufacture of baking powders." Section 2. "Every person making or manufacturing baking-powder or any mixture or compound intended for use as a baking-powder, which contains alum in any form or shape, shall secretly affix or cause to be secretly affixed to every box, can, or package containing such baking-powder or like mixture or compound, a label upon the outside and face of which is distinctly printed in legible type not smaller than 'long primer,' the name and residence of the manufacturer and the following words: 'This baking-powder contains alum.' Any person violating the provisions of this section shall be deemed guilty of a misdemeanor and shall for each offense be punished by a fine of not less than \$25 nor more than \$100 and costs, or by imprisonment in the county jail not to exceed 30 days." Section 3. "The having in possession by any person or firm of any of the articles or substances hereinbefore described, not labeled as provided in section 2 of this act, shall be considered prima facie evidence that the same is kept by such person or firm in violation of the provisions of this act, and the state dairy commissioner, his assistants, experts and chemists, or any one thereof, are hereby authorized to seize upon and take possession of such articles or substances, and upon the order of any court which has jurisdiction under this act, he shall sell the same, giving full notice of the time of such sale and of the fact that such compound or substances contain alum, and the proceeds of such sale shall be placed to the credit of the state commissioners' fund."

LEAVE ROOM FOR ENLARGEMENT.

The importance of starting right when designing and laying out a manufacturing plant can not be over-estimated. One of the most important things to be considered is the possibility of future additions to the buildings and machinery which may be demanded by an increasing business; yet how often is this overlooked. It is nearly always just as easy, when locating buildings, so to place them that they may be added to at any future time without tearing down some other building or removing a large amount of machinery, as it is to huddle them all together, so that there is no chance for expansion without remodeling a whole plant, or stopping

some portion, or the whole, of the works for a longer or shorter time. Such additions to a plant are generally made when business is rushing and the concern can the least afford to stop.

THE WHEAT PLANT IN HISTORY.

Wheat was undoubtedly raised in prehistoric times. The Chinese are known to have cultivated it 4,500 years ago, and they regarded it as a special gift from heaven. The ancient Egyptians attributed its origin to Isis, and the ancient Greeks considered the precious grain under the protection of Ceres, the goddess of cereals. According to their mythology she taught her favorite, Triptolemus, agriculture, besides the art of bread-making, and lent him a celestial chariot from which he could distribute seed wheat to all nations of the then known world. Homer tells us in his Odyssey that wheat grew wild in Sicily, and Diodorus mentions a tradition that Osiris found it and barley in its native wild state in Palestine, and the generally received idea is that Asia was the home of this important plant. Three small-grain varieties were cultivated by the lake-dwellers of Switzerland, and a grain of wheat was discovered imbedded in a brick of an Egyptian pyramid, to which the date of 3,359 B. C. has been assigned. In addition to this the existence of names for wheat in the most ancient languages proves that it has been more or less in use since the earliest times, which would naturally lead us to suppose that wheat was found growing wild in several regions in and west of Central Asia, the home of all nations. The varieties of wheat are innumerable. Col. Le Conteur, of New Jersey, cultivated 150 varieties, and Darwin states that a French gentleman had collected 382 varieties, and the great French seed merchants, Vilmorin, Endrieux et Cie, cultivate twice as many in their grounds in the vicinity of Paris. In his recent work, "Les Meilleurs Bles," Henry L. de Vilmorin describes 68 varieties of the best wheat, which he separates into seven classes, although they can scarcely be called different species, since he cross-bred three of them, when he found the results fertile.

THE CRACKER AN OLD CHESTNUT.

Very few consumers of wheaten products are aware of the fact that crackers are the oldest form of bread. Fragments of unfermented cakes were discovered in the Swiss lake dwellings, which belong to the Neolithic age, an age dating back far beyond the received age of the world. Although this rude form of bread was early discarded for the fermented variety, yet in this, as in many other matters, it was found convenient to return to a discarded and apparently valueless process. Thin unfermented cakes were found to possess merits for special purposes. They would keep good for a great length of time, and they were convenient to carry and thus afforded wholesome and nutritious food in a portable and convenient form. The simplicity of their making and baking was also a point in their favor.

In concluding a report on the Indian wheat trade, Donald Smeaton, Director of Agriculture and Commerce of the Northwestern provinces, says: "I would only repeat, in conclusion, that in my opinion endeavor in India to develop the wheat trade will be comparatively infructuous unless backed up by influence in England. It is the London merchants who must give the initial impetus. That impetus once given will be communicated rapidly from the ports to the large country marts, from the marts to the villages, and from the villages to the millions of cultivators who raise the wheat, which, if it only can get a fair chance, will, ere long, outstrip its American and Russian rivals and firmly establish itself in the principal markets of Europe." That is the sort of rot dished out to sustain the Indian wheat bugaboo in Great Britain and the United States. How far does it square with facts, probabilities and possibilities? 1. The utmost capacity for export by India is measured by the largest amount of wheat sent out in any one year, which is less than 40,000,000 bushels, while the average export will fall below 30,000,000 bushels. How far would that go towards cover-

ing the 100,000,000 to 120,000,000 bushels annually imported by Great Britain alone, to say nothing of other importing countries of Europe? 2. How can an Indian average surplus of less than 30,000,000 bushels "outstrip" the American average surplus of 120,000,000 bushels? 3. What are the probabilities of every season in India? Drouth, insect pests of unexampled intensity, famine, worn-out soil, costly irrigation, lack of fertilization and an essentially inferior, thin, nasty, dirty, weak, undesirable and unsatisfactory grain, that can not be floated into consumption without being floated upon hard, good, strong, sound American or other wheat? 4. What of the possibilities? It is hardly worth while to discuss them. There may be war, that would at once end all wheat exportations from India indefinitely. The Russians may force the battles with the British on Indian soil. The Hindoos themselves, restive under British domination, may revolt. In either case the British investments of money in railroads and wheat-growing enterprises would be wiped out. With these possibilities in view, it is folly to talk of bringing "all the wheat lands" of India into culture and into communication by railroad with exporting centers. The Indian bugaboo is discounted, not only by the physical facts and by the inferiority of the Indian wheat, but even more by the reliability and the superiority of the American wheat. Mr. Smeaton should fertilize his bugaboo, if he wishes to make it grow to impressive proportions.

WAS a good part of the recent talk about bad weather, ruined crops and wheat shortages really only "bull" talk, after all? It is strange that wheat prices do not advance more strongly, if all the shortage reports were true. Perhaps the bulls have again overshot the mark and prepared the way for a regular old-fashioned collapse, somewhat similar to the collapse of last winter, after the wise men of Minneapolis discerned an illumination in the Orient and talked wheat prices up among the little stars, skedaddling round the moon.

A PORTLAND report says: The warm, dry weather has been favorable to the wheat harvest in Oregon, which has been under full sway in all parts of the state for two weeks. General reports indicate that the fall wheat will be more than an average crop, while spring grain will be short. The berry is reported small and shriveled, and the wheat second class in quality. The yield of this first lot was about 10 bushels per acre.

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GENERAL NOTES.

THE Giant diamond, lately discovered in Cape Colony, and now at the Paris Exposition, weighs 180 carats and is valued at \$4,000,000. It is kept in a glass case by itself, and guardians stand around it all day. At night it is placed in a big safe, which is similarly guarded all night. It is said to be of the first water and as pure as the famous Regent in the French crown diamonds.

CHEW THIS CHEERFUL CHAFF.

Speaking of trusts, the cattle trust will be taken by the horns, and the cigarette trust will be smoked out. What, ho! there without; bring on more trusts that we may make bright, pleasant remarks about them.—*Albany Express*. Yes; and while you are exterminating the trusts, just blow out the oatmeal trust and grind out the flour trust.—*American Miller*. America's national flour is corn-meal. New York papers please copy and adopt.—*Washington Critic*. Crying over his defeat will do Kilrain no good. "The 'mill' will never grind with the water that is passed."—*Terre Haute Gazette*. By the way, has any body heard what "Old Hutch" intends to do this year with the Kansas wheat crop?—*Nebraska State Journal*. Mr. Younghusband—"My dear, I am sorry to see that one of our nice new dishes is cracked." Mrs. Younghusband—"Yes, love, but what could you expect? We have had cracked wheat in it for the past three months."—*Ex*. "The subject of a national flower is being discussed a great deal now, Miss Minnie," remarked a visitor at Minneapolis to a maiden of that city. "What do you think about it?" "Well," replied Miss Minnie, "I think papa's fancy spring wheat flour takes the biscuit."—*New York Sun*. "Mamma," said one of the numerous progeny of yours truly, "I heard papa reading in the paper the other day that bread had gone up, and that a good many little boys and girls didn't have enough to eat." "Yes, my dear, it is very sad." "Well, mamma, I was thinking that you could give the poor little boys and girls my share of bread and butter if—if—you'd only give me cake instead."—*British Baker*. The

St. Louis *Republic* wants "to market a portion of the grain crop raised in Chicago." We shall be pleased to place all orders. Our terms are C. O. D. Please be explicit in directions whether to ship in bags or in bulk. If you have an elevator in town bulk is the best. Please state also whether there are any railroads which reach St. Louis, and trains that stop there long enough to unload a full car.—*Inter-Ocean*. The biscuit may rise, but it can not explain. The orator takes the cake.—*Ex*. An exchange asks what causes boilers to explode. Boilers explode for the same reason that fools can't keep their mouths shut—because they are too weak to hold their gas.—*Ex*. Bread is the staff of human life, and advertising is the staff of business.—*Ex*. The Sullivan-Kilrain mill is a poor one to take your grist to.—*Chicago Times*. Cast your bread upon the waters, and it will spoil good water and good bread.—*Atchison Globe*.

POETRY ON AND BY YB MILLER'S DAUGHTER.

AND AGAIN THE MILLER'S DAUGHTER.

With Madge, the miller's daughter,
While song birds were a-wing,
I wandered 'mid the waving corn,
With its golden tasseling;
And down the crested hillside swept
The yellow sunlight's tide,
And O! the gray old world looked bright
As we walked side by side.

With arm around her lissome waist,
I whispered words endearing;
And sweet and low her answer came—
Almost too low for hearing;
And hide and seek the frolic winds
Play'd 'mid the rustling corn;
And O! our hearts with love were full
On that fair summer morn.

But ah, love's wings are very fleet,
And sweetest hours have ending;
Too soon we heard the old mill's sails
Beneath their labor bending;
But long before we left the corn
My gentle Madge I kissed,
And O! methought its tassled sheaves
Had ne'er hid happier tryst.

Abram Lent Smith in "American Miller."

MADGE'S VERSION OF IT.

With Abe, the city dudelet,
While geese did hiss and squawk,
Accompanied by my poodlet,
I in the corn did walk.
All down the horrid hillside moist
Was spread the sticky mud,
And up my weary feet I'd hoist,
Then drop them with a thud!

Abe acted like a perfect jay,
And gabbled soft and spoony—
Why must a man, who should be gay,
Go acting queer and loony?
We waded, traipsed, through miles of corn,
With nasty tassels dangling,
Till I was daubed with mud, and torn,
And mad enough for wrangling!

O! weary, slow and dull that walk,
The fates seemed most unfriending!
Abe nothing did but spoon and talk
In stream of gush unending!
And glad was I when, from the mill,
My Papa, dear old sinner!
Called to me on the muddy hill:
"Come, Madge! It's time for dinner!"

Smith Lent Abram.

The Canton Cabinet Filing Case Company, Canton, Ohio.

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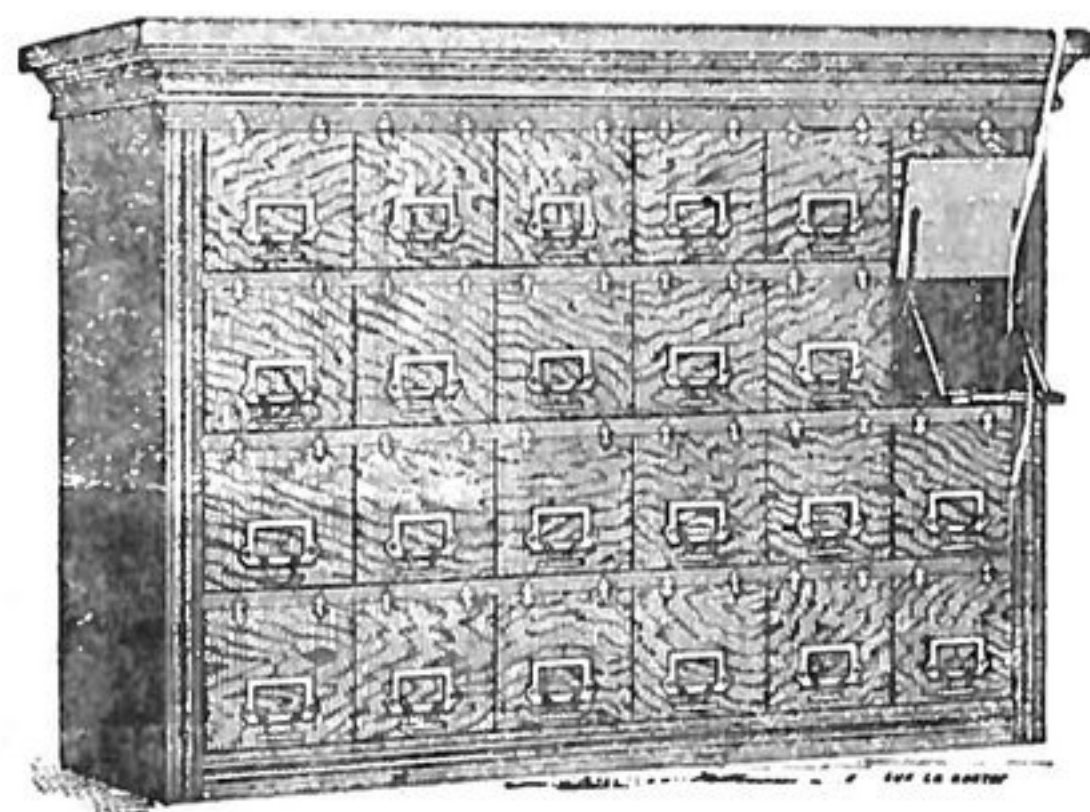
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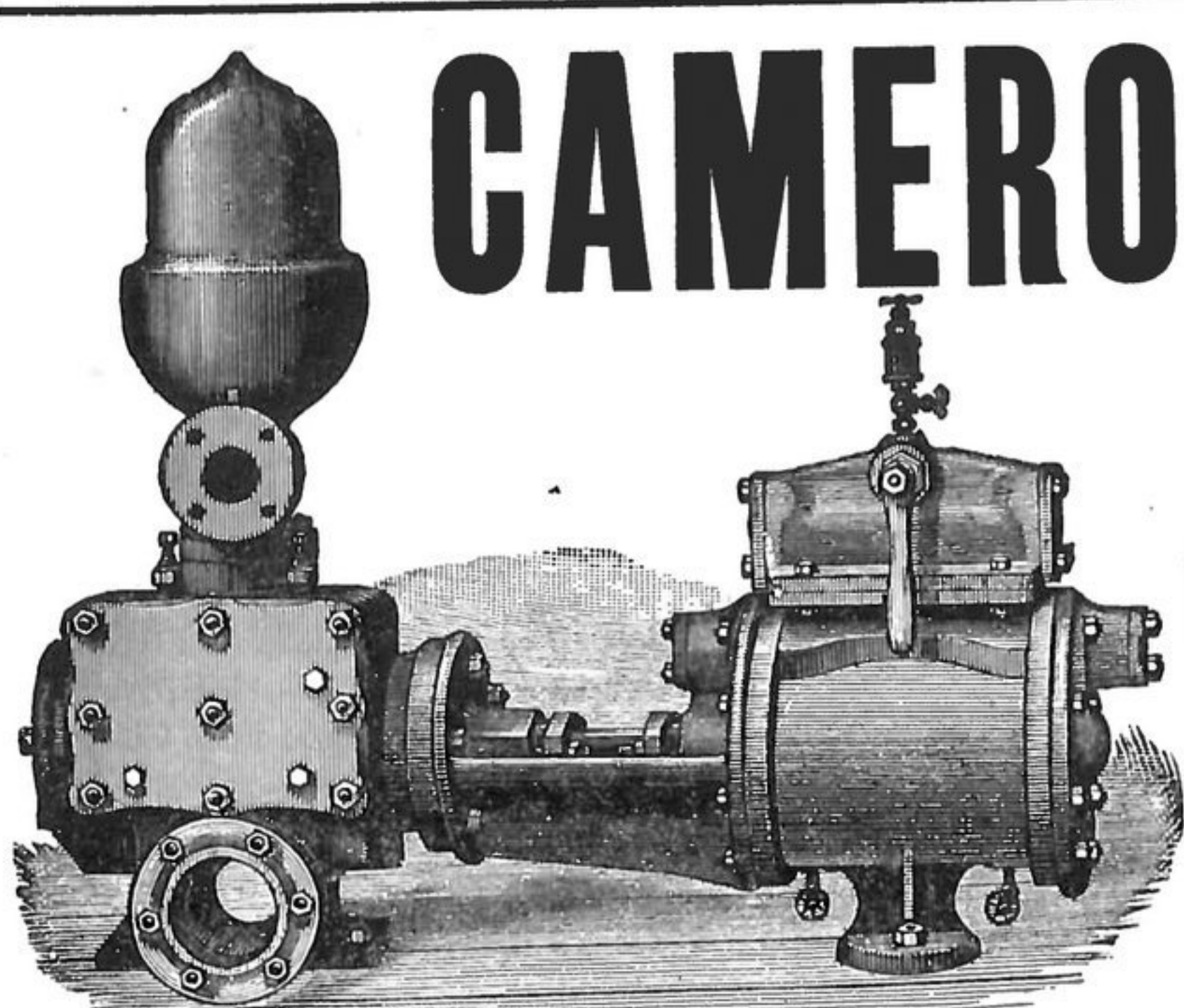
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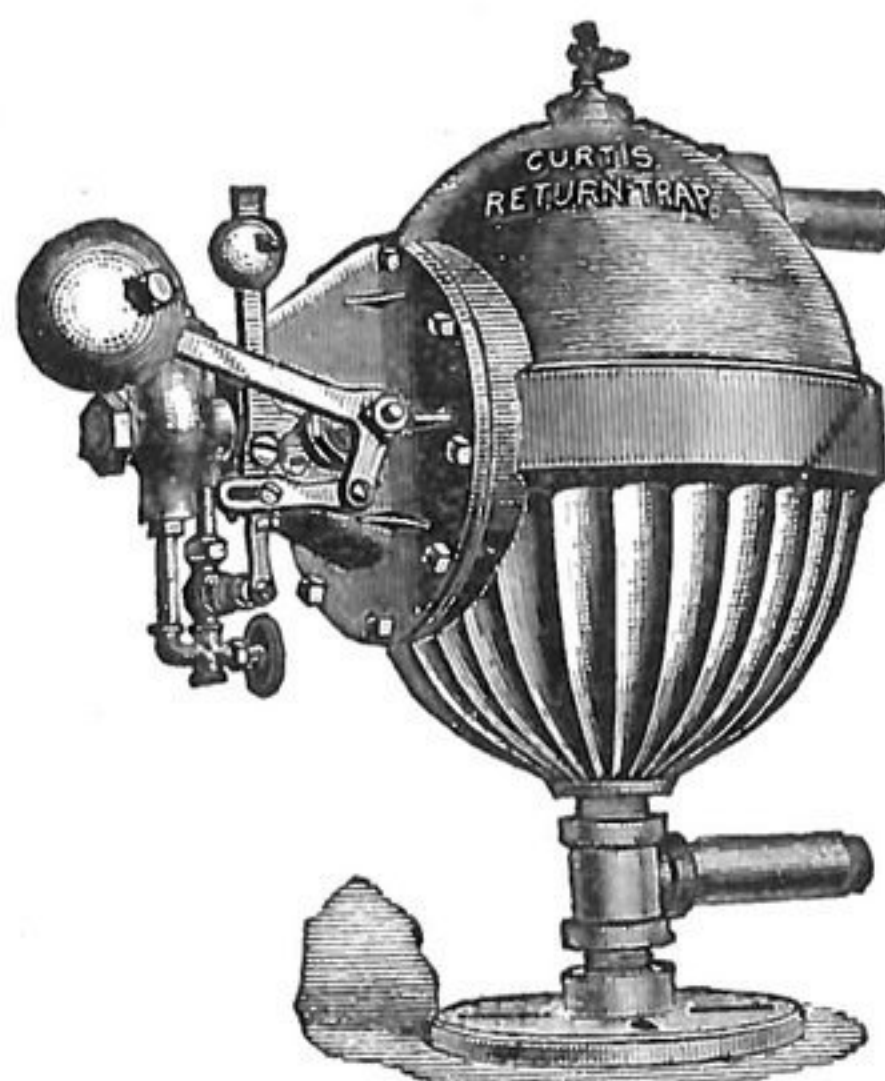
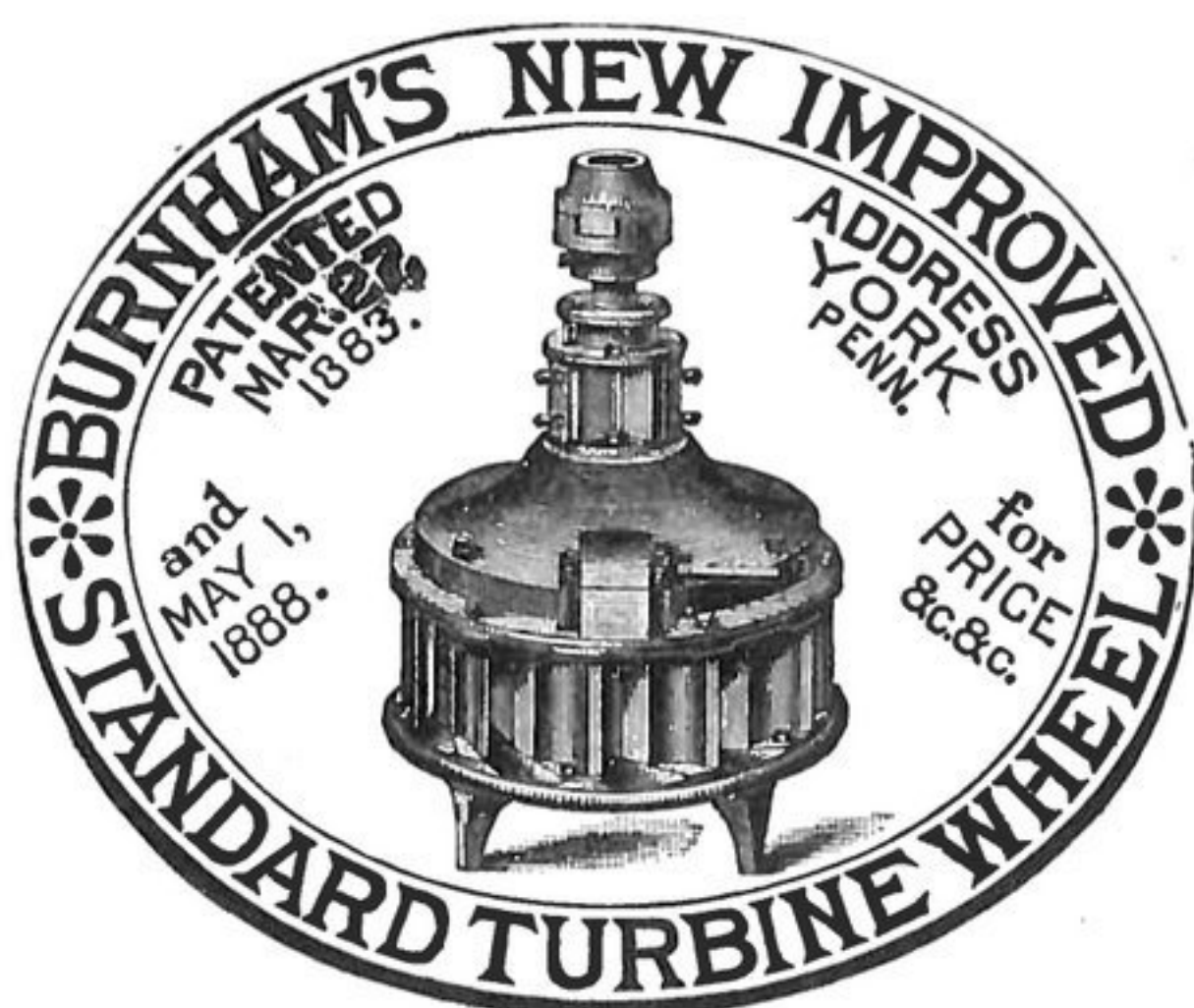
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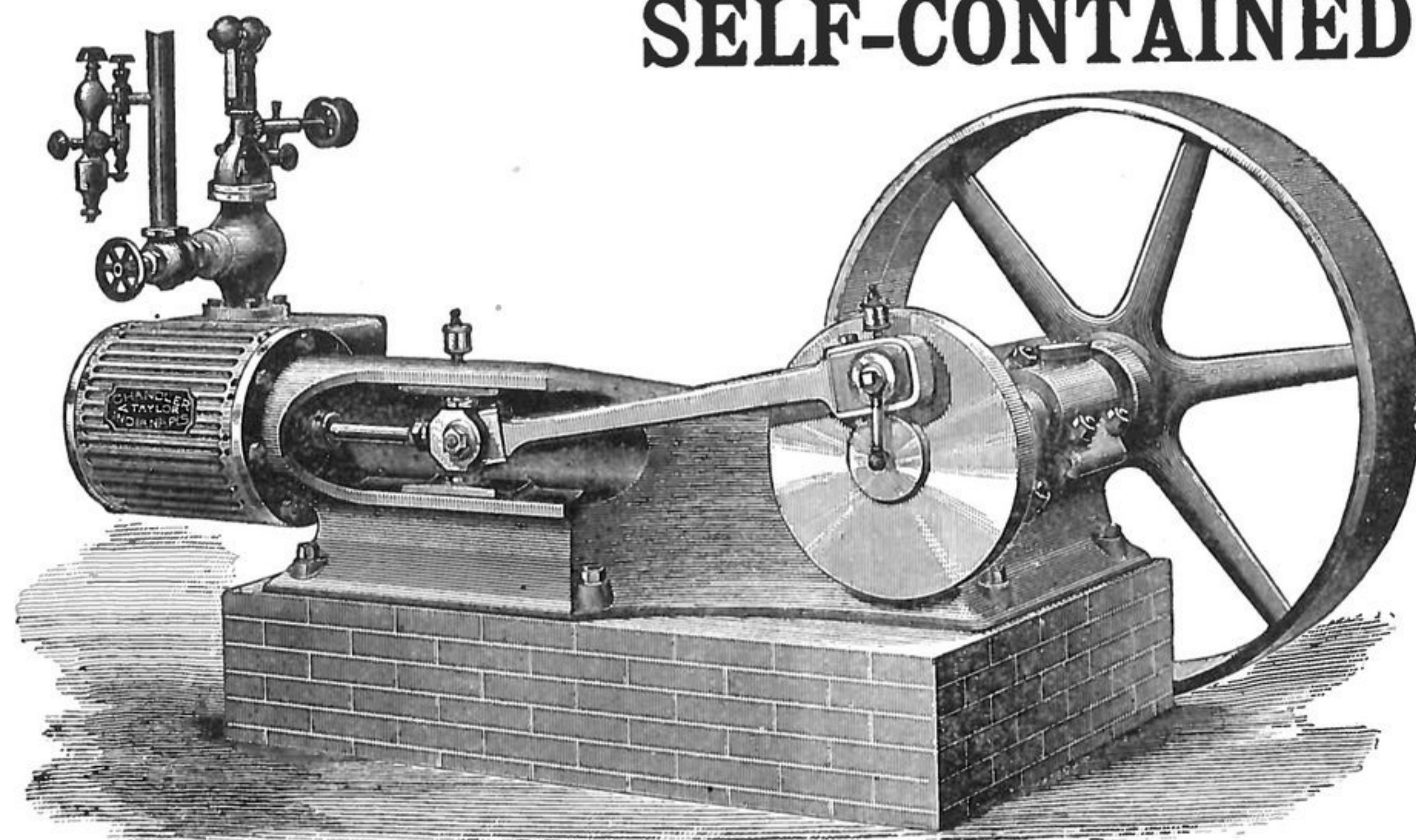
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NOTES & NEWS

Clark & Co., Lockhart, Tex., build a grist-mill.
 Blackwell's grist-mill, near Butler, Ala., burned.
 Grise Bros., Harrelsville, Ky., build a flour-mill.
 Dr. T. H. Baker, Pine Log, Ga., builds a flour-mill.
 R. B. Mann, Wye, Ga., wants corn-mill machinery.
 A. Boling, Fordsville, Ky., wants corn-mill machinery.
 Eichstedt & Freeman's flour-mill, Waterloo, Wis., burned.
 J. T. Wyatt, Salisbury, N. C., wants grist-mill machinery.
 J. C. Owen's grist-mill, Livonia, N. Y., burned; loss \$5,000.
 N. G. Clark, Montrose, Colo., now the Montrose Milling Co.
 Samm & Co., millers, Oakland, Cal., now Samm & Westphal.
 H. L. Bushnell & Co.'s elevator, Sidell, Ill., burned; loss \$25,000.
 Wm. Orr's grist-mill, Mt. Forest, Ontario, Can., burned; loss \$10,000; insurance \$3,500.

Drennen & Co., Birmingham, Ala., have bought the Wharton flouring-mills for \$32,800 and will improve and operate the plant.

The Farmers' Alliance of Young county, Texas, have bought the McCloud flour-mill at Graham; they will remodel to rolls.

The new mill of the Sweetwater, Tenn., Milling Co. will have a capacity of 500 barrels of flour and 1,500 bushels of meal in 24 hours.

W. T. Akers and others, Marietta, Ga., have incorporated the Empire Milling Co., capital stock \$80,000, to build and run a flour and corn mill.

The Alcott flouring-mill, Kalamazoo, Mich., owned by Sheldon & Breese and leased and operated by W. W. Nesmith, burned; loss over \$12,000; insurance light.

Late crop reports indicate that spring wheat will yield about 155,000,000 bushels. Corn has been held back by wet, cool weather. Oats have been damaged somewhat by late rains. The spring wheat is being gathered.

Wheat threshing is well under way in Wabash county, Indiana. Several fields have produced from 35 to 40 bushels per acre, and few have fallen below 15. The quality is generally good. Corn is in fine condition.

Among recent orders for Compound Engines, The Westinghouse Machine Co. report the following: one 35 H. P.; three 50 H. P.; five 65 H. P.; two 100 H. P.; one 125 H. P.; seven 150 H. P.; seven 200 H. P.; one 250 H. P. Total, 27 engines, aggregating 2,535 H. P.

Leffel's celebrated turbine water-wheels are not only in great favor among users of water power in the milling line, but find a wide range of usefulness in the other great industries. The Marquette Electric Company, of Marquette, Mich., are putting in a pair of 40-inch twin Leffel water-wheels to develop 350 horse-power.

The demand for the Automatic Compound Engine recently placed on the market by The Westinghouse Machine Co. is such that the Company is actually selling entire shop-orders of different sizes before their manufacture is even commenced. Up to the present time they have built and sold seven different sizes of these Compound Engines, ranging from 35 to 150 H. P. They have also been compelled to add two additional sizes, viz: 200 and 250 H. P., to their list, and are now working their pattern and foundry departments day and night in order to get the first shop-orders completed promptly. Already they have actual orders for twelve of the 200 H. P. size and several orders for the 250 H. P.

The Westinghouse Machine Co. seem to have solved the problem of medium and small sized Compound Engines, in addition to the heavier horse-power. This Company is now manufacturing Single-acting Compound Engines down to 35 H. P., and adding a line of patterns down to 3 H. P. Although turning out over 3,000 H. P. per month, they are constantly over-sold, and are now running their works on double turn. To illustrate the adaption of the Compound Engine to small powers, we would note one of their Compound Condensing Engines of 45 H. P. on the dock

of the Red Star Steamer Co., at New York. This engine exhausts into a Korting condenser using salt water, and operates a storage battery plant.

A Minneapolis letter says: There have been a few samples of new wheat threshed from the shock shown on the market, and the quality has been taken as a fair sample of the crop, so that millers here have already begun to look with dissatisfaction on the quality of old wheat offering. Of course there will be little new wheat ground during August, but by mixing it with old it can be ground to some extent soon after threshing. The lower grades of old will probably be used for mixing, and millers will begin it as soon as possible in order to get at the superior grain now being harvested. Spring-wheat millers have lost a good deal of their trade during the year, and some concern has been felt that it will never be recovered, but with the unexcelled grain the Northwest will secure this season it is probable that the lost business will not be slow in returning.

The Miller's Association of Iowa held a meeting at Des Moines, Ia., July 17. H. C. Murphy, of Des Moines, was president, and J. T. Sharp was secretary. Among those present were: Allen Smith of Boone, Bryson, jr., of Indianola, James Taggart of Knoxville, H. M. Schreiber of Bode, J. C. Naylor of St. Charles, E. P. Corbit of Winfield, Van Roosevelt of Ackley, Joseph Reed of Munroe, W. I. Johnson of Keota, H. C. Murphey of Des Moines, N. R. Saunders of Adel, H. D. St. John of Cedar Rapids, J. G. Sharp, representing the Alton mills, V. W. Hancock of Adel, S. Kenworthy, of Perry, S. D. Nichols of Panora, A. T. Birchard of Norfolk, Neb., J. B. Jones of Algona, Abner Graves of Dow City, L. F. Minzesheimer of Indianola, and E. A. Consigny of Avoca. The convention was an interesting one. Wheat-growing was discussed. Work for the future was laid out.

The North Dakota Millers' Association held a meeting at Fargo, Saturday, July 13. The President, J. S. Hillyer, called the meeting to order, and after the minutes of the preceding meeting had been read and approved, the president made a report of the work he had done since the June meeting in the interest of the association. The association was well pleased with the work of President Hillyer, and a vote of thanks was tendered him. J. M. Turner was appointed secretary pro tem. The report of the treasurer was read and laid upon the table. The secretary read communications from "Park River Mill," R. L. Frazee, Geo. Tileston, "Red River Valley Mill," "Otter Tail Mill," and Warren Mfg. Co. Telegrams from Lee & Herrick, L. D. Platt and "Fergus Mill" were read. The following officers were elected: President, J. S. Hillyer of Bismarck; vice-president, William C. Leistikow of Grafton; secretary and treasurer, John M. Turner of Mandan; executive committee—J. S. Hillyer, Bismarck; D. B. Shotwell, Fargo; G. H. McPherran, Minto; F. B. Chapman, Grand Forks; and Henry Gill, Moorhead.

The millers of the counties of Oxford, Norfolk, Brant, Haldimand and Waterloo met at Brantford, Ont., July 25, and formed a local organization. The following officers were elected: President, W. Partloo of Ingersoll; vice-president, W. Snider of Waterloo; secretary and treasurer, C. B. Watts; executive committee, Chas. Whitlaw of Paris, D. Goldie of Ayr, G. H. Harper of Norwich, W. Brown of Simcoe, and R. Shirra of Caledonia. The following scale for buying wheat by the tester was unanimously adopted and will be tried until the next meeting, at which time, if found to work satisfactorily, it will be made compulsory: Sixty-four pounds 4 cents above the market price; 63 pounds 3 cents; 62 pounds 2 cents; 61 pounds 1 cent, the standard being fixed at 60 pounds. For wheat weighing 59 pounds 1 cent less will be paid; 58 pounds 2 cents less; 57 pounds 5 cents less; 56 pounds 8 cents less; 55 pounds 12 cents less; 54 pounds 15 cents less; 53 pounds 20 cents less. The following table for the exchange of wheat for flour was also adopted: Sixty-two pounds of wheat 39 pounds straight roller flour; 61 pounds wheat 38 pounds flour; 60 pounds wheat 27 pounds flour; 59 pounds wheat 36 pounds flour; 58 pounds wheat 35 pounds flour; 57 pounds wheat 34 pounds flour; 56 pounds wheat 30 pounds flour; 55 pounds wheat 25 pounds flour and 12 pounds offal. Mr. David Plewes, secretary of the Ontario Millers' Association, addressed the Association on the disadvantages under which the millers labor, and the possible remedies, the advantages of the Dominion Association, and the benefits to be derived therefrom. The next meeting of this association will be held at Woodstock on the 15th of August.

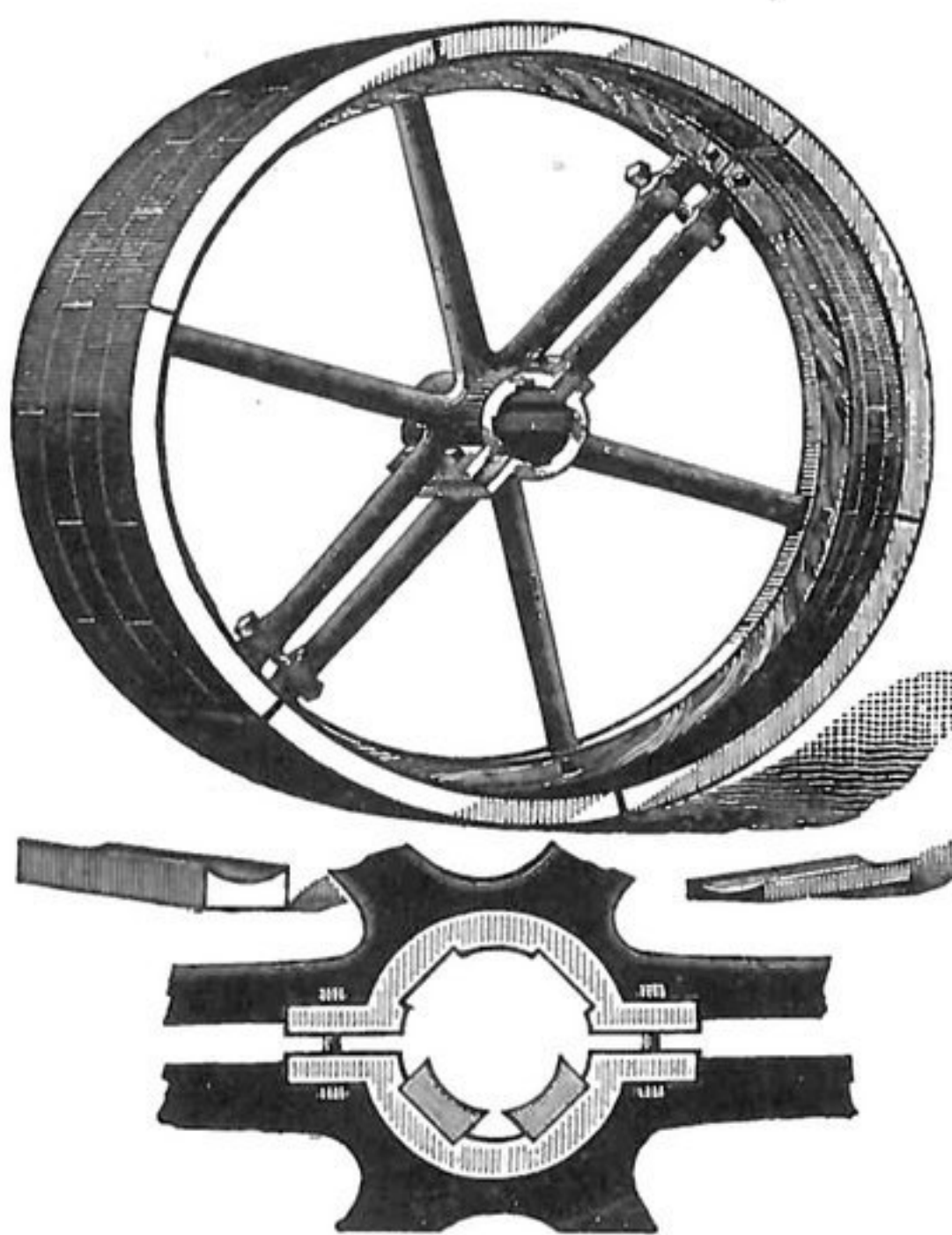


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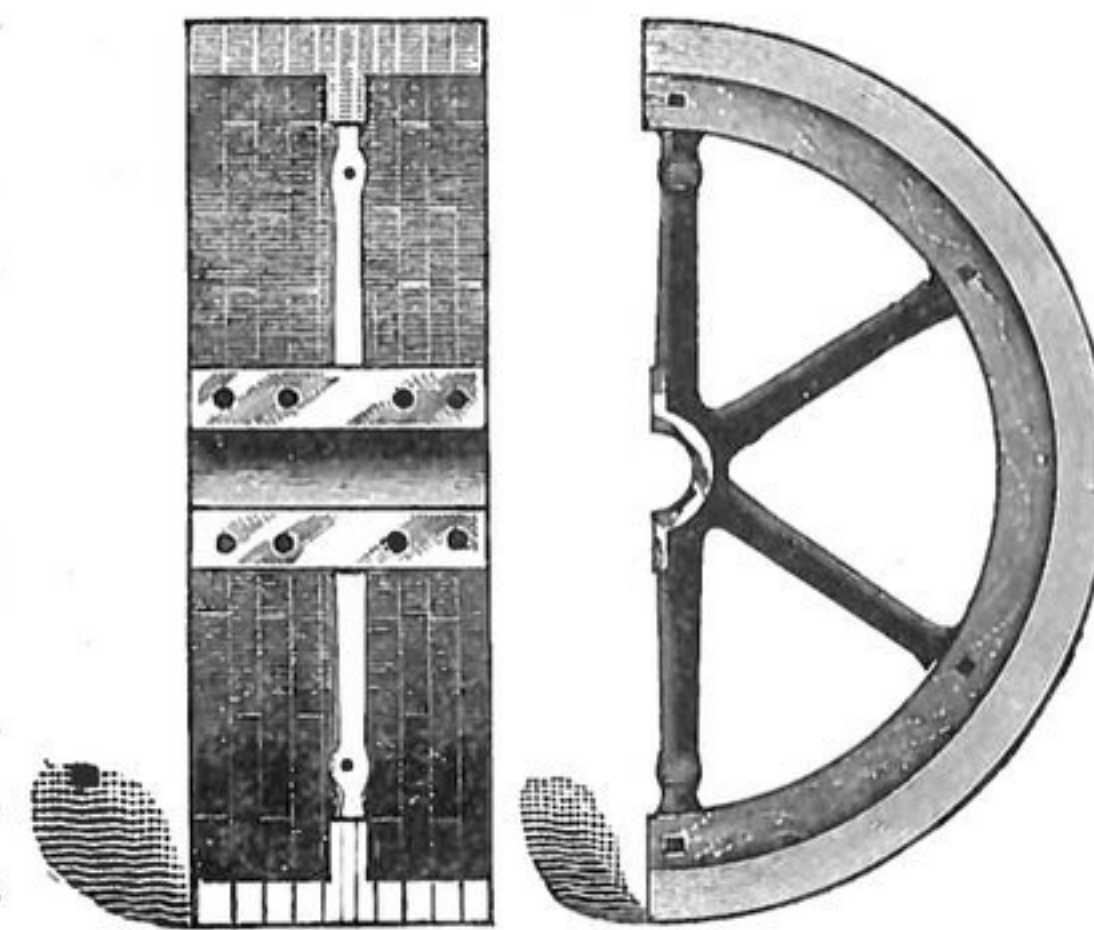
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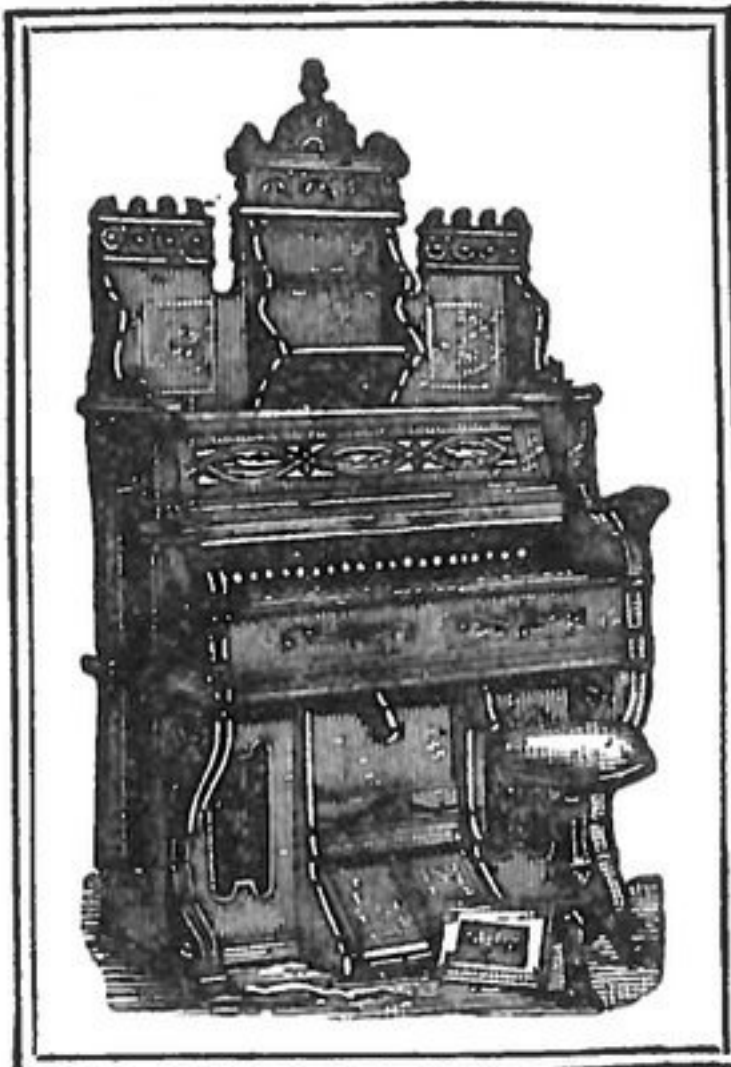
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EUROPEAN ECHOES.

A STRASBURG, Alsace-Lorraine, letter of July 23 says: The crops do not come up to their promises and are causing disappointment everywhere. Barley looks bad, and the grain is meager; the yield will not be more than that of any average crop. Many of the ears are empty, and others show much damage from insects.

AN Odessa, Russia, report of July 20 says: The great heat and scarcity of moisture completely destroy all hopes for the recovery of the crops in the Cherson, Bessarabian and Tauride districts. Loud complaints come to us from every side, and the yield is now expected to be much below the average. The quality and natural weight also will show a great deficiency.

A REPORT from Liege, Belgium, dated July 24, says: Rye has been cut, and the harvest of wheat is commencing. Most of the latter, which has been laid by storms, will only yield a middling quantity. Its color is dull, and the natural weight is below the average. That which has been able to withstand the numerous storms is clearer in color and altogether in an exceptionally fine condition. We now only require fine weather to complete the harvest.

SAYS the London "Miller" of July 22: France has been getting on with its harvest through a week of heavy rainstorms. These have interrupted, but not suspended, work entirely. Where threshings have been made the sample is found irregular, from big sheaves above the average in number. The lodged and rusty wheat has not matured satisfactorily, and only an average yield is expected, so write Messrs. Lacaussade et Romann. The expectations of the crop when in flower are not entirely fulfilled, but the country is believed to have all the rye and wheat wanted for consumption. Paris, after weakness, has become firm in its new corn exchange.

A BUDAPEST correspondent writes: "The harvest in Austria-Hungary will be finished this year about ten days earlier than generally, partly because the wheat came earlier to maturity owing to drought and unnatural heat, and partly because the farmers hastened to finish the harvest to prevent its exposure to the constant heat. The crop of 1889 will not be nearly as large as those of the past two years, and will be rather less than that of 1886. Our production in 1886 was 13,100,000 quarters; in 1887 it was 18,850,000; in 1888 it was 17,400,000, and in 1889 about 11,100,000 quarters. Rye and barley are bad. Maize till now good, but commencing to suffer from heat; if we do not soon get rain, it will also be injured."

COTEMPORARY COMMENT.

Mr. Frank Barry has ascended the throne lately vacated by Mr. Seamans, from which edicts, bulletins and favors proceed. That the throne suits Mr. Barry goes without saying to any one who has experienced his aristocratic wrath and his love of dispensing favors with the air and dignity of a lord. Whether he fits the throne is another question. He drops into his position easily and gracefully, however, and it is more than a passing coincidence that Bulletin No. 1 associates the name of the Secretary of the Millers' National Association and the Secretary of State in the President's cabinet. The present secretary of the Association may possibly be an improvement on his predecessor. He has, however, the same idea about rewarding his friends and punishing his enemies (those who differ with him on any subject) that brought the Association to its present position. An offense against him will ever be an affront to those he represents. He can not help it; he is made that way. Of course the Executive Committee has a perfect right in the exercise of its sovereign pleasure to elect him secretary. But what can that august body say of "personal journalism" after electing him? They have prated about "personalities" in journalism for three or four years (started by the way, by

its own "official" newspaper bantling) as if their names and actions were sacred. What will they think of "personal journalism" after reading the screed printed in the May issue of "The United States Miller," and written by Mr. Barry? Mr. Barry was then in the employ of Edw. P. Allis & Co. and had no provocation whatever to write it, as neither he nor his firm had been subjected to any public criticism.—*Chicago "American Miller."*

A wealthy mennonite by the name of Renfel, of Getna, Manitoba, recently purchased two threshers and engines in the United States, for which he paid in cash about \$3,000, besides \$900 import duty, together with \$140 freight. When they arrived, a local implement agent reported to the government that they had been manufactured by convict labor. The machines and engines were seized by the authorities and it is said will be destroyed, as it is contrary to Canadian law to import any thing from the United States made by convict labor. Mr. Renfel, who was ignorant of this law, will have to lose the whole amount, and if his good senses come back to him that part of Her Majesty's domain will lose a good and prosperous citizen.—*St. Louis "Miller."*

Unless a change comes speedily and a rainfall large enough to develop some amount of green vegetation in the fall, the prospect of early and destructive prairie fires is very great indeed. Not only are such fires to be dreaded for their immediate consequences, but for the very deleterious effects they leave on the land they pass over—*Winnipeg, Manitoba "Nor-West Farmer & Miller."*

An English syndicate is carrying on negotiation with a view to the purchase of a number of the largest flouring-mills at Minneapolis, Milwaukee and other milling-centers in the United States. There is a large amount of milling property for sale in Canada at present, but we may be allowed to presume that so long as our tariff helps to make the American miller rich and the Canadian miller poor, the syndicate will confine its attention to Yankee mills.—*Toronto, Ontario, "Electrical, Mechanical & Milling News."*

ANG-UISHD POETRY.

"BANG" WHANGS "CLANG."

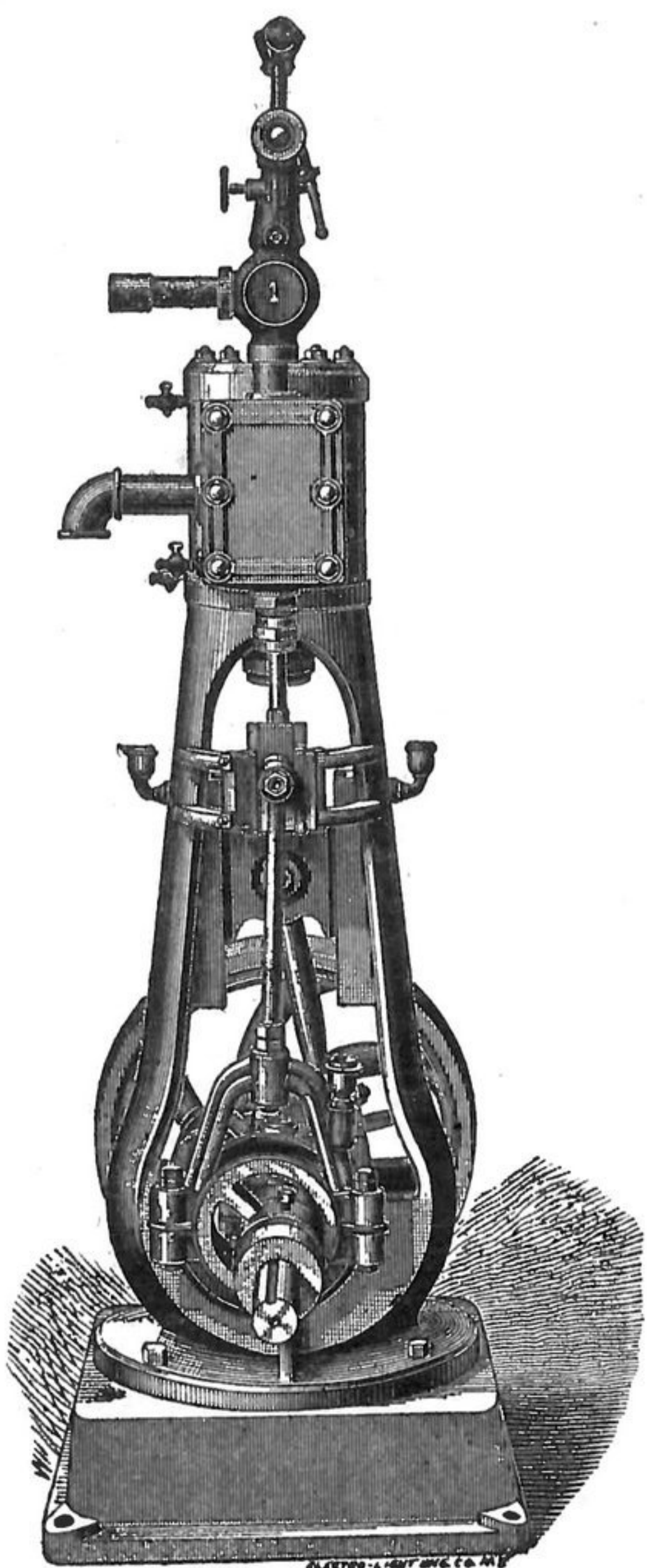
O "Clang"!	Go hang	Says "Whang,"
You lang-	O'er swang!	"Go hang
Uage whang	And dang-	In ang-
With slang	Le, mang-	Uished pang!"
Harangue,	Led, tang-	The ang-
While "Bang"	Led, jang-	Ered gang
And "Whang,"	Led, wrang-	Loud sang.
The gang,	Led, bang-	With fang
Shout "tang"!	Led krang!	And vang
You sang	Yea, "Clang,"	The gang
A yang-	A stang	Will bang
Take wang,	To bang	And whang
Orang-	Your slang!	You, "Clang"!
Outang!	Says "Bang,"	Kling-Klang!

Bang, Duluth, Minn., August, 1889.

JAY GOULD STATISTICIZED.

Says an English cotemporary: A statistician has compiled some curious facts concerning Mr. Jay Gould's fortune, which, capitalized, is said to be worth £60,000,000. If this sum were in £5 notes and the notes were fastened end to end, the strip of paper would be long enough to reach from London to Moscow. If the sum were in sovereigns, the coins piled singly one upon another would reach to a height of nearly 73 miles. The weight of the column would be about 570 tons, or enough load for 57 railway trucks, or for an army of 11,400 porters, each charged with a hundred-weight of gold. If the fortune were in penny postage-stamps, the stamps placed end to end would suffice to reach four times from the earth to the moon and back again. If it were penny pieces and if ten men, working night and day without intermission, were set to count them at the rate of 100 a minute, the operation would last 27 years. Mr. Gould is rich enough to give a shilling to each person at present alive in the world, but to distribute the shillings at the rate of ten a minute, night and day, Sundays included, would occupy 230 years. Finally, this colossal fortune is enough to supply 3,000 with an income of £1,000 a year each for ever. Mr. Gould is, it is believed, not only the richest man of the day, but the richest man who has ever lived.

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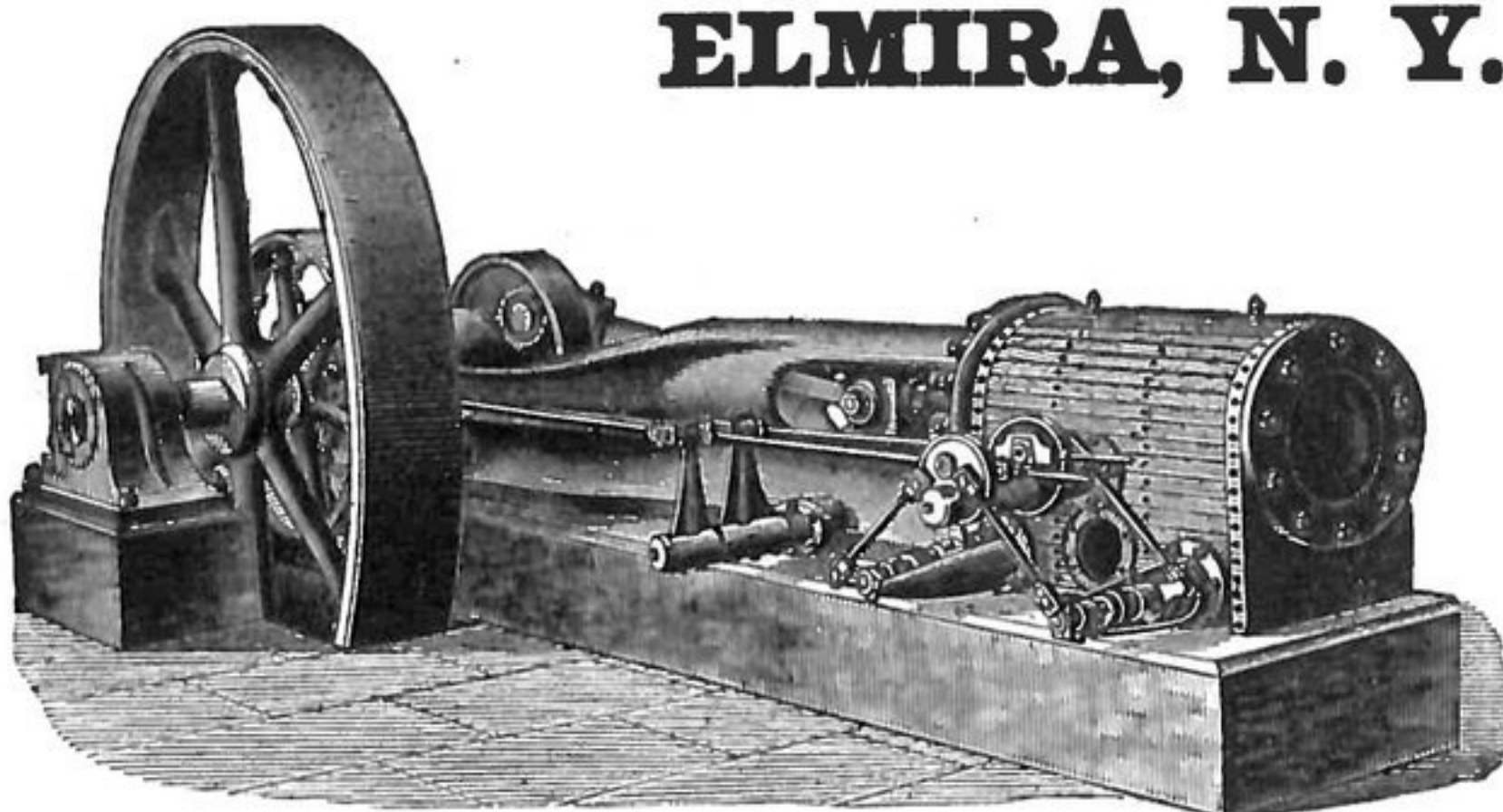
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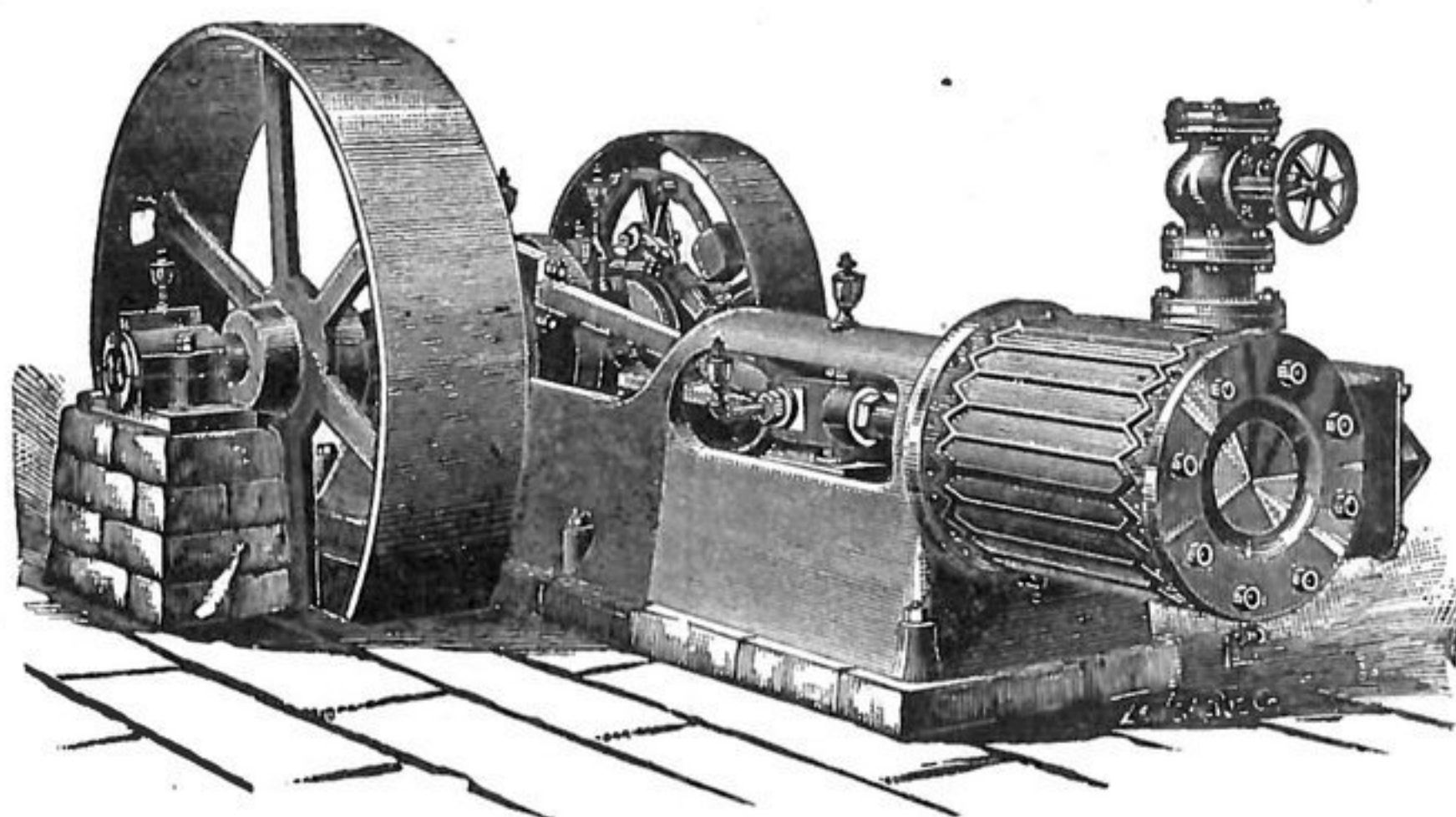
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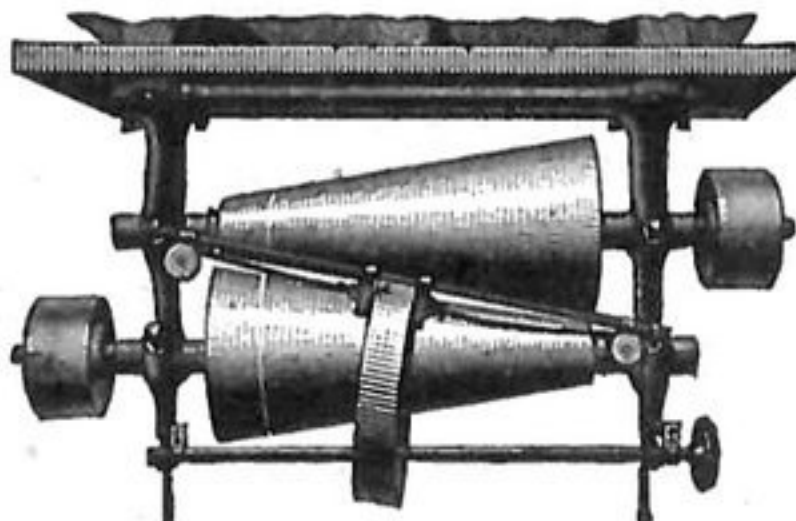
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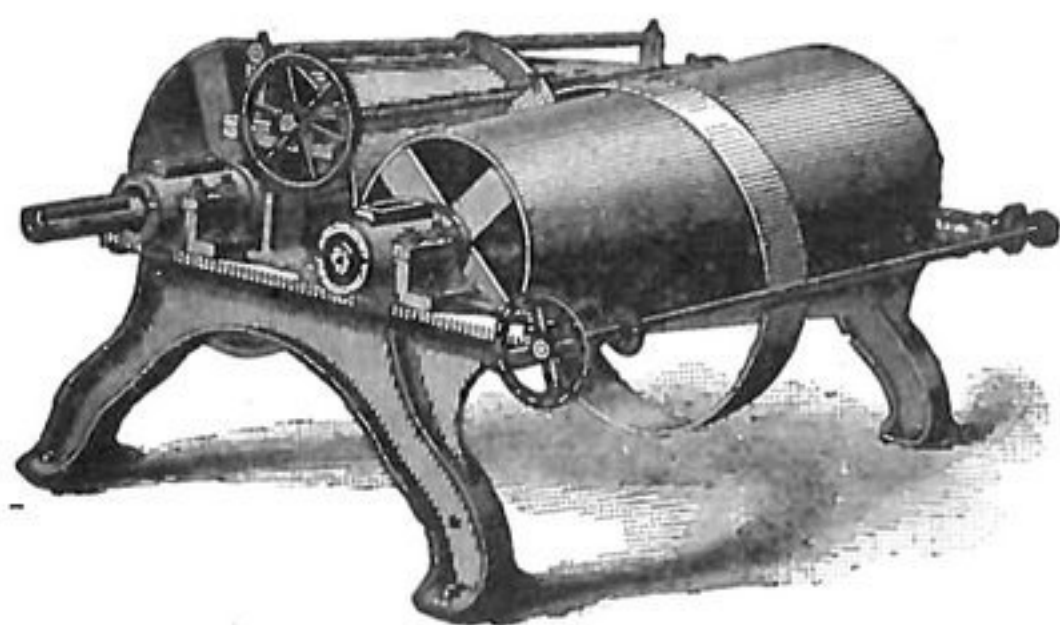
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OFFICE OF THE MILLING WORLD,
BUFFALO, N. Y., Aug. 10, 1889.

Friday brought reports of larger crop movements in the West, with bear raiding and decreased speculative demands. As a consequence the markets were weak and lower. August wheat closed at 85½c. Options 2,000,000 bushels. August corn closed at 43¾c. and oats at 27½c. Wheat flour was slow on home orders and better on export inquiry and orders. The minor lines were featureless.

Saturday was a day of inactivity. August wheat closed at 85½c. Options 720,000 bushels. August corn closed at 43¾c. and oats at 27½c. Wheat flour was heavy. Trade was very light. All the other lines were quiet.

Monday brought dull, firm markets for wheat and flour, while corn and oats fell off on account of great receipts in the West. August wheat closed at 85½c. Options only 880,000 bushels. August corn closed at 43¾c. and oats at 27c. Wheat flour was dull and unchanged. There were no cables from European markets, and the home buyers were holding off. The minor lines were quiet. The visible supply in the United States and Canada was:

	1889. Aug. 3.	1888. Aug. 4.	1887. Aug. 6.
Wheat.....	12,687,967	22,997,794	33,691,097
Corn.....	6,988,351	9,009,649	7,309,148
Oats.....	3,719,754	2,210,557	2,808,400
Rye.....	796,364	152,945	305,411
Barley.....	362,939	145,000	125,923

Tuesday brought a variety of reports. One was a report of the shipment of 350,000 bushels of wheat out of Chicago for export. Another was a report of private information from Great Britain to the effect that, after all, the British wheat crop has been seriously damaged by rust. Another report stated that the Indian wheat crop is 700,000 tons short and very bad in quality. The agricultural bureau of Illinois estimated the wheat crop of that state at 40,000,000 bushels. The home news was all "bear," and the foreign news was all "bull." The markets were dull and steady. August wheat closed at 85½c. Options only 840,000 bushels. Exporters took some wheat for European markets. August corn closed at 43¾c. and oats at 27c. Wheat flour was dull and unchanged. British export orders at old prices were reported. Other export demand was good. The minor lines were featureless.

Wednesday brought reports of freer wheat offerings in the west and of better weather in Europe, making the markets lower, weaker and duller. The spring-wheat crop was estimated at 155,000,000 bushels, or 45,000,000 bushels more than the crop of 1888. The amount on passage increased 1,320,000 bushels. August wheat opened down at 85½c. and closed at 85c. Options only 928,000 bushels. Some loads of wheat were taken for Europe and South American countries. August corn closed at 43¾c. and oats at 26¾c. Both were in small trading. Rye grain was nominally 55c. afloat and 53c. bid for export for State. Malt was steady at 95c. @ \$1 for Canada, and 85 @ 92½c. for State 2-rowed and 6-rowed. Mill-feed was dull at the following quotations: 40-lbs, 60 @ 62½c; 60-lbs, 57½ @ 62½c; 80-lbs, 60 @ 65c; 100-lbs, 75 @ 80c; sharps, 80 @ 85c; rye, 70 @ 75c.

Wheat flour was not active. Members of the Flour Committee of the New York Produce Exchange reported arrangements to draw the lines more distinctly between the different grades of flour. They claim that the new crop flours will be more easily and distinctly graded than the old-crop flours. The market was rather slow. The export trade was mainly for

the West Indies. Following are the quotations:

SPRING FLOUR.		
	Sacks.	Barrels.
No grade.....	\$1.75 @ 1.90	\$.... @
Fine.....	2.10 @ 2.20	2.25 @ 2.60
Superfine.....	2.30 @ 2.60	2.70 @ 3.10
Extra No. 2.....	2.95 @ 3.25	3.15 @ 3.40
Extra No. 1.....	3.40 @ 3.80	3.65 @ 4.30
Clear.....	3.50 @ 3.80	3.80 @ 4.05
Straight.....	4.30 @ 4.80	4.45 @ 5.20
Patent.....	5.55 @ 6.05	5.45 @ 6.05

WINTER FLOUR.		
	Sacks.	Barrels.
No grade.....	\$1.90 @ 2.00	\$.... @
Fine.....	2.40 @ 2.50	2.50 @ 2.65
Superfine.....	2.65 @ 2.75	2.75 @ 2.90
Extra No. 2.....	2.75 @ 3.00	2.80 @ 3.00
Extra No. 1.....	3.00 @ 3.25	3.50 @ 3.90
Clear.....	3.80 @ 4.30	4.20 @ 4.55
Straight.....	4.45 @ 4.80	4.60 @ 4.95
Patent.....	4.65 @ 4.95	5.15 @ 5.25

CITY MILLS.		
W. I. grades.....	\$4.40 @ 4.50	
Low grades.....	2.75 @ 2.80	
Patents.....	5.25 @ 6.05	

Rye flour was dull and neglected at \$2.75 @ 3.00. Corn products were dull at the following figures: Coarse city meal 83c; fine yellow \$1.05 @ 1.07; Brandywine, \$2.75; Southern and Western \$2.60 @ 2.75; grits \$2.60 @ 2.70; hominy grits \$3 in bbls. \$1.20 in sacks; granulated brewers' meal \$1.30 per 100 lbs. in sacks. Corn flour \$2 @ 3 for bbls; chops 60 @ 65c.

Thursday brought little change in the market conditions. August wheat closed at 85½c. Options only 760,000 bushels. August corn closed at 43¾c. and oats at 26¾c. Wheat flour was heavy, dull and unchanged. The minor lines were featureless.

BUFFALO MARKETS.

WHEAT—There was a fair demand for spring wheat to-day; sales were made early of 2,900 bu new No. 1 hard at 99½c, and 2,000 do old No. 1 Northern at 92c at the close no further sales were reported and the market was unchanged at \$1.20 for old No. 1 hard and 90c for No. 2 spring. Winter wheat in fair demand but light supply; sales comprised 5,000 bu No. 2 amber at 85c in store and 1 carload No. 2 extra white at 98c; No. 2 red was held at 84c, and No. 3 do at 75c; 83c was asked for No. 2 amber on track. **CORN**—Opened in fair demand but with a weak market; sales were made up to noon of 5,000 bu No. 2 corn at 40¼c, and 5 carloads No. 3 do at 40c; at the close the market was a trifle stronger at the following prices: No. 2 yellow 41¼ @ 42c, No. 2 corn 40¼c and No. 3 do 40¼c. **OATS**—In moderate demand and market dull. No. 2 white was offered at 31½c on track and No. 3 do at 30¾c in store; white State oats from farmers' wagons was quoted at 35 @ 36c. **RYE**—Steady; a sale was reported of 1 carload No. 2 Western at 49c, which is about the first sale of the season. **BARLEY**—The reports from the barley-growing sections as to the weather are not encouraging, but the harvest reports are more encouraging than they have been, and it is expected that we will have barley at the Exchange within the next two weeks. **CANAL FREIGHTS**—Firm. Rates of freight on wheat to New York 4c on corn 3½c, and on oats 2½c, lumber rates to New York \$2.25, to Albany \$1.75. **FLOUR**—City ground—Patent spring, \$6.25 @ 6.50; straight Duluth spring, \$6.00 @ 6.25; bakers' spring, best, \$5.75 @ 6.00; do rye mixture, \$5.00 @ 5.25; patent winter, \$6.00 @ 6.25; straight winter, \$5.00 @ 5.25; clear winter \$4.75 @ 5.00; cracker, \$4.75 @ 5.00; graham \$4.75 @ 5.00; low grade, \$3.00 @ 4.00; rye, \$3.25 @ 3.50 per bbl. **OATMEAL**—Akron, \$6.00; Western \$5.75 per bbl; rolled oats, in cases, 72 lbs \$3.25. **CONMEAL**—Coarse, 85 @ 90c; fine, 90 @ 95c; granulated, \$1.50 per cwt.

INDIAN WHEAT PESTS IN ENGLAND.

The following memorandum has recently been issued by the Agricultural Department of the Privy Council Office, and will doubtless be perused with the utmost interest by British farmers and millers, as it is written by Mr. Charles Whitehead, agricultural adviser to the Lords of the Committee of Council on Agriculture, who has made a special study of the insect enemies of the agriculturist. Mr. Whitehead writes with reference to Indian grain. The foreign matter mixed with wheat imported from India into this country serves as a medium for the wholesale transportation of insects injurious to crops. From the cleanings of Indian wheat

several categories are formed at the flour-mills. One consists of short pieces of straw from 1 inch to 2½ inches long, with pieces of wheat ears. This is sold for litter and is distributed among various farms in the neighborhood of the mills. In this straw the most dangerous corn insects might be introduced, insects of the type of the Hessian fly, which was without doubt brought into this country in this way; and of the type of the *Isosoma Hordei*, the joint-worm, whose appearance in Great Britain is feared by agricultural entomologists.

Another comprises light and misshapen grains of corn with weed seeds, known in this country as "screenings," and which ought to have been taken out of the bulk by the Indian producers. This is purchased for pig and chicken food, being therefore scattered over the face of the land. In this corn-weevils especially and other insects may easily be conveyed. It is well known that weevils are most destructive to wheat and other grain in India. It is also equally well known that they are brought over to British ports and granaries in abundant quantities with Indian wheat. One species of weevil, the *Calandra oryzae*, the rice weevil, does enormous harm to wheat in Indian granaries and to wheat while it is being transported in vessels to this country. The admixture of dirt, seeds and rubbish causes the wheat to heat, which of course is detrimental to its quality, and at the same time causes the weevils to propagate unusually and materially to damage it. Sometimes the cargoes of wheat that have heated are nearly alive with weevils, causing enormous waste and heavy losses to importers. This loss continues when the bulk is taken to granaries or warehouses, where the heat is still evolved and the weevils revel in it.

According to estimates furnished by Messrs. Ralli, the well-known Indian wheat shippers, the amount of loss occasioned by this weevil is put at an average of 2½ per cent. Taking the value of wheat exported at \$30,000,000, the amount of loss due to this insect in exported wheat alone equals \$750,000. Another weevil, the *Calandra granaria*, closely allied to *Calandra oryzae*, is also brought over with Indian wheat. This weevil is known in British and other European granaries, but it is presumed that the heat and surrounding circumstances of cargoes of Indian wheat favor its development and stimulate its powers of destruction. As it breeds freely in this country the danger of its distribution is very great. Besides the actual money loss occasioned by these weevils, it is stated that the flour made from wheat much infested by them is injurious to health.

The largest wheat crop ever raised in Marshall county, Ind., is now being threshed and marketed. The average yield per acre thus far is 31 bushels, many fields running as high as 45. The estimated yield of this county is placed by good judges at 1,200,000 bushels.

A Baltimore report says that the grain elevators in that city are so nearly empty that on yesterday there was not in all of them sufficient corn to load one ship, and attributes this condition of things to the restoration of grain rates, which has stopped the shipment of grain from the west to Baltimore.

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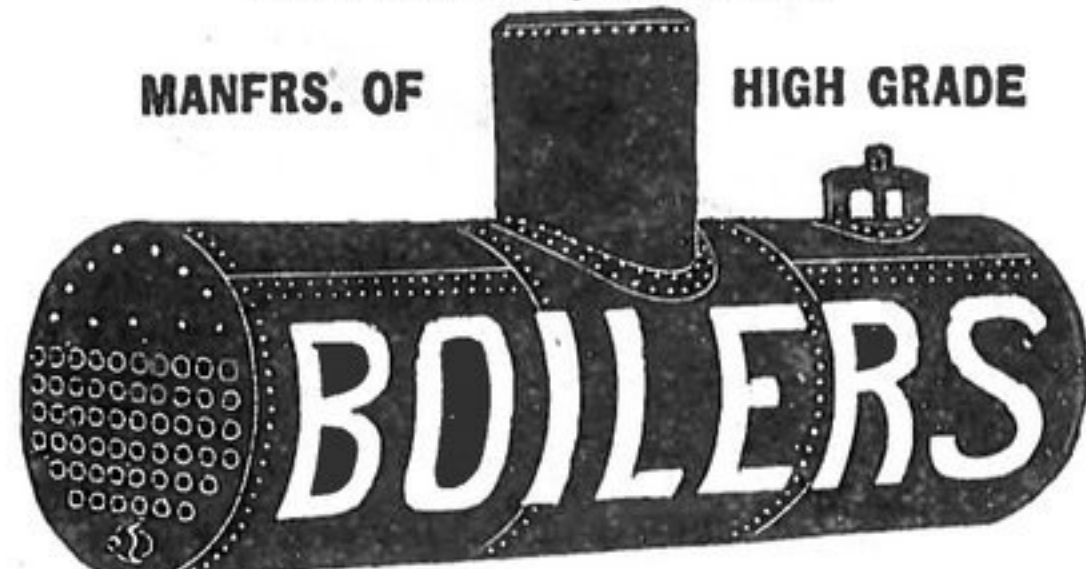
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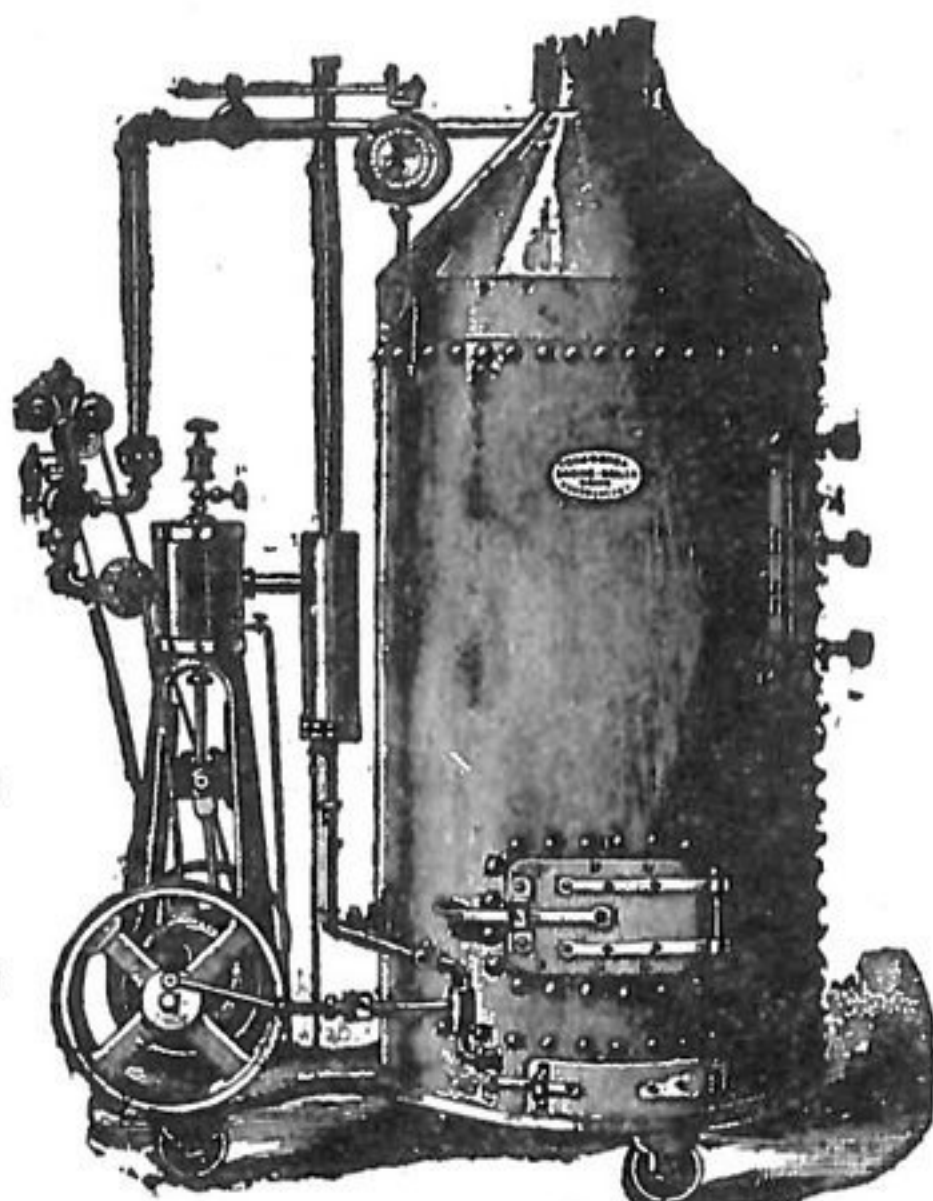
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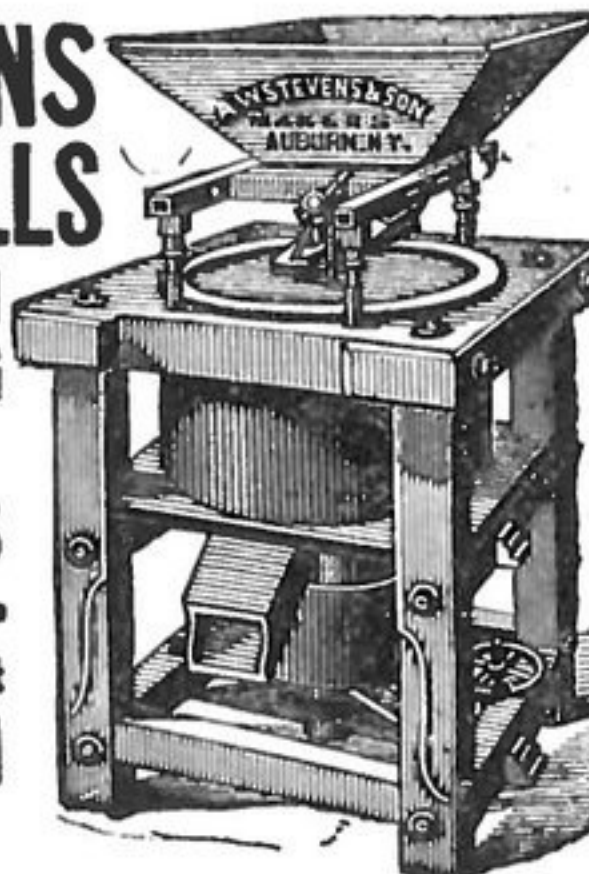
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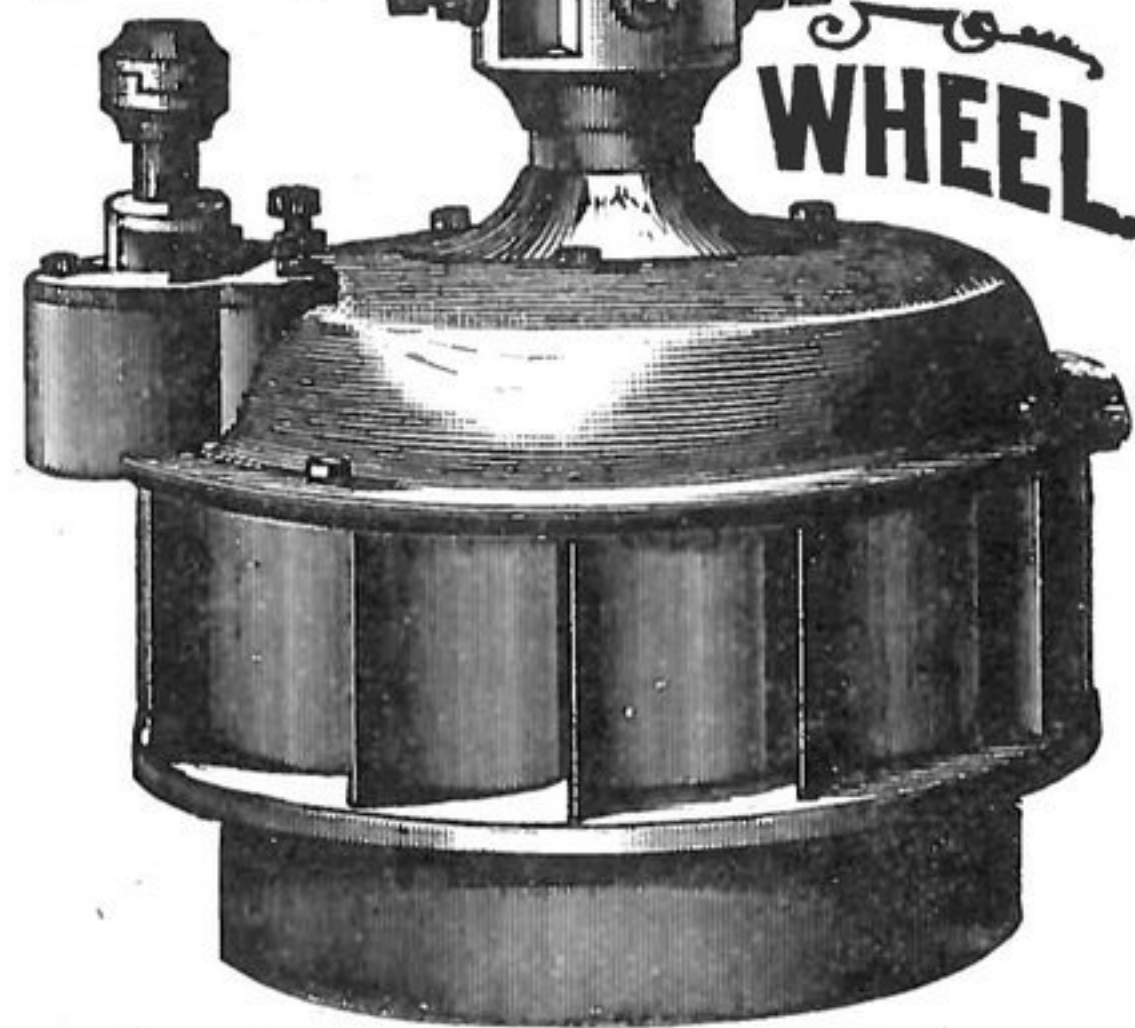
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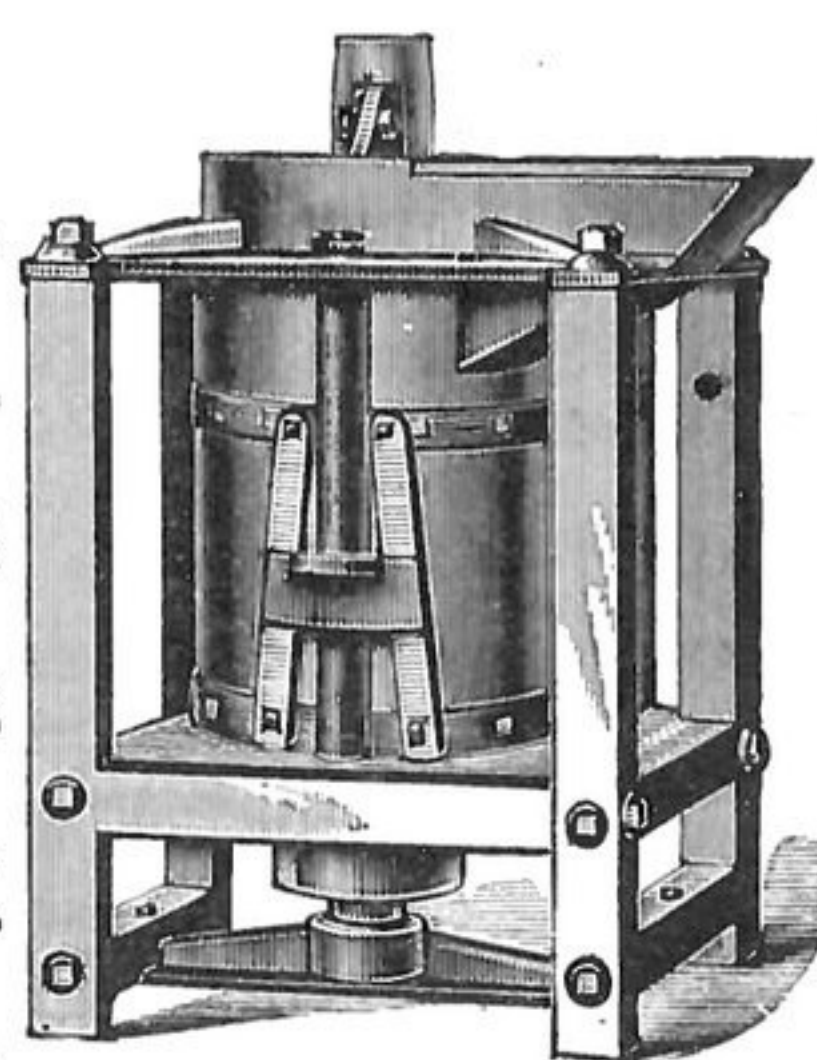
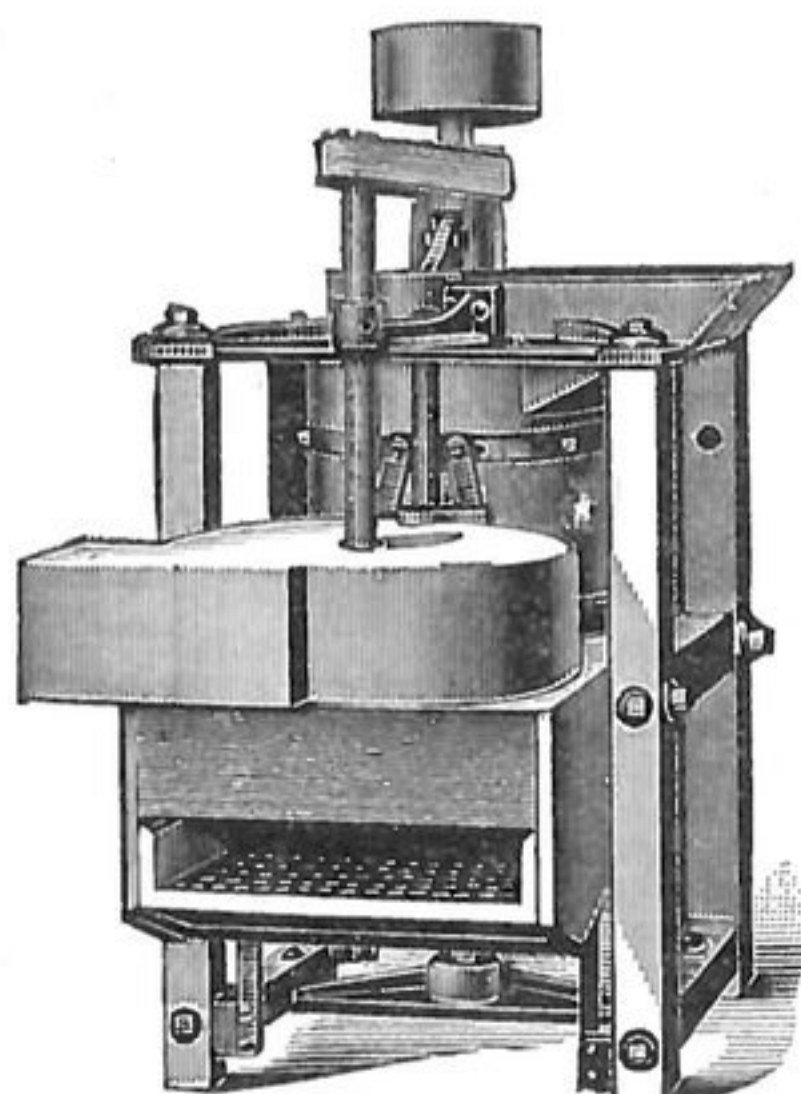
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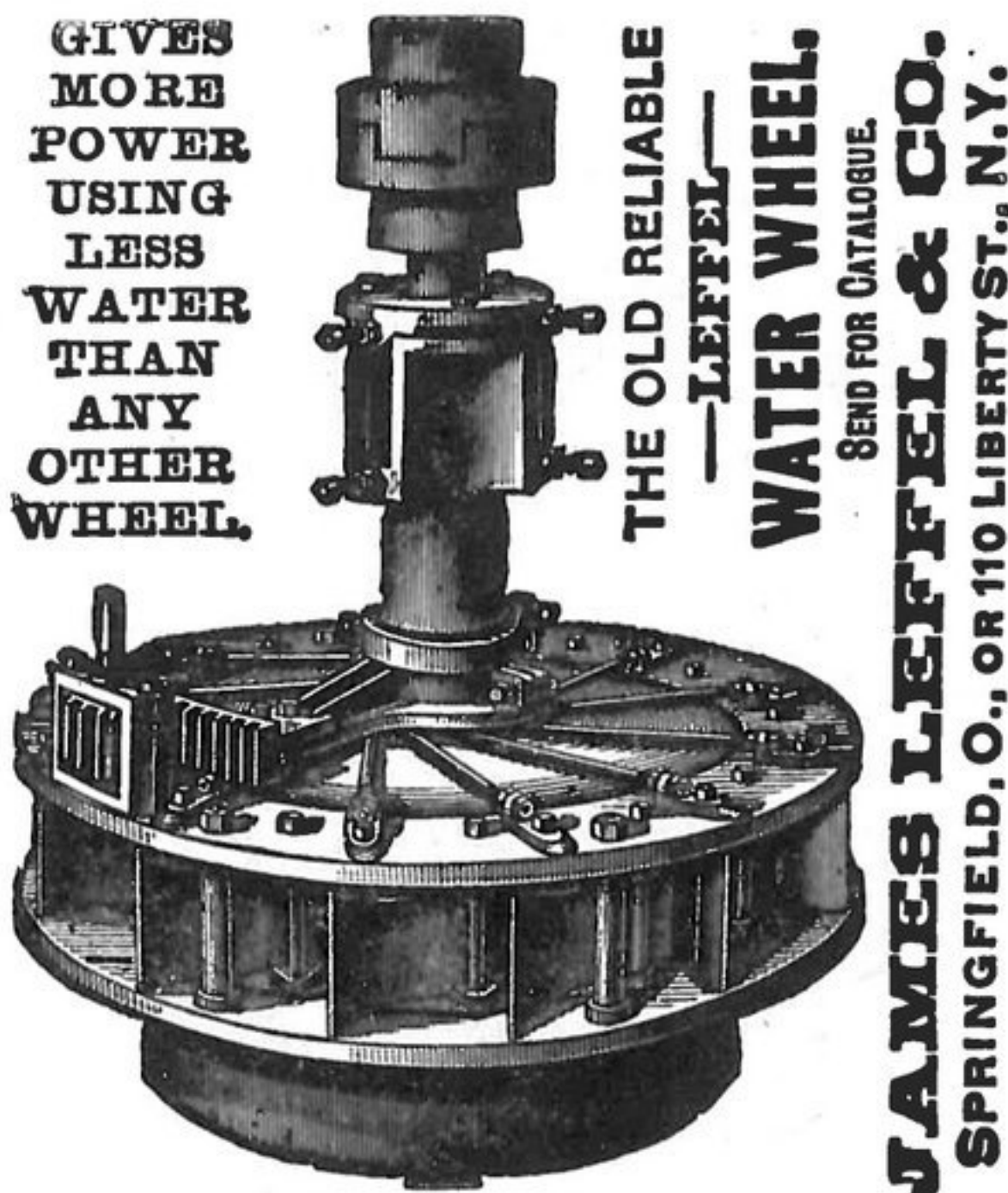
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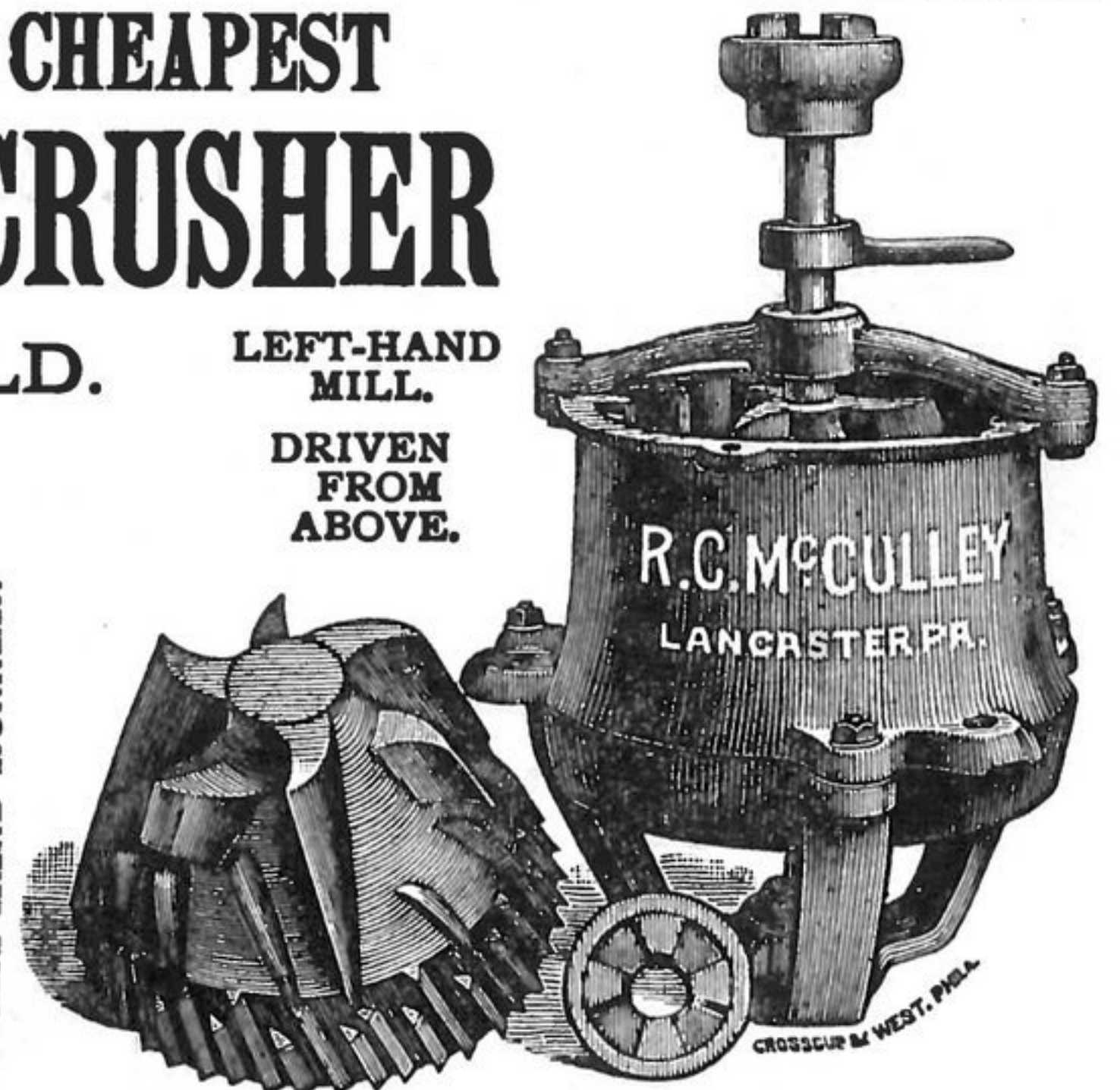
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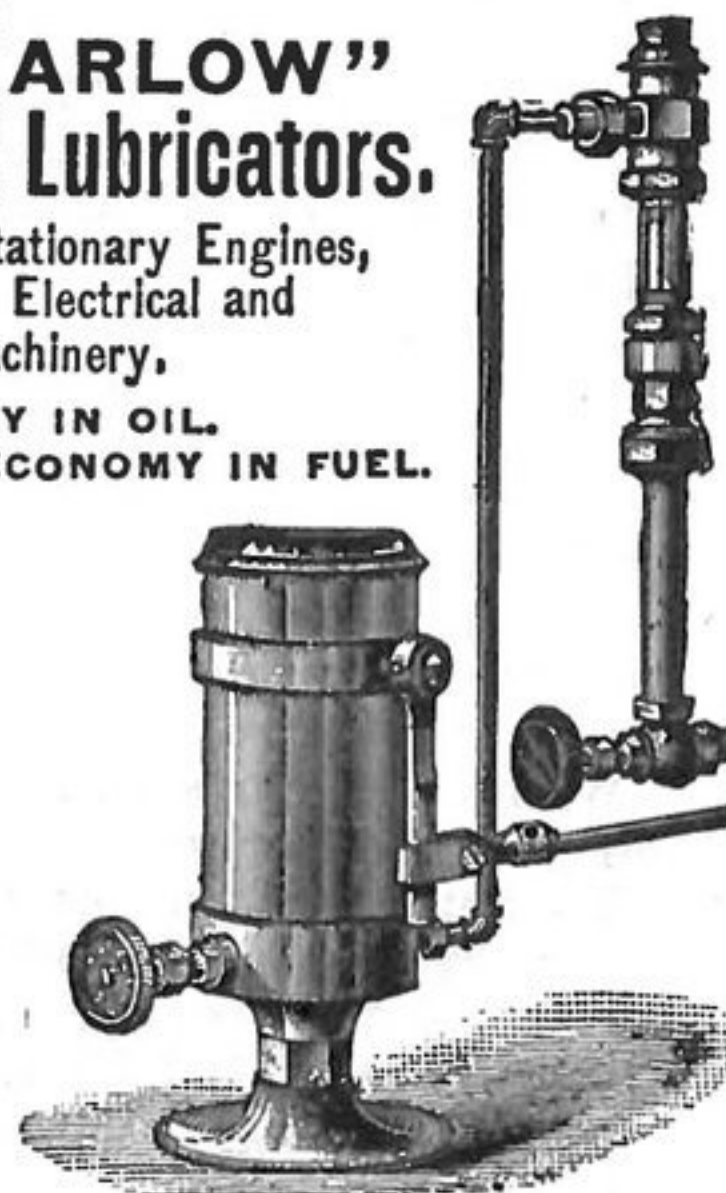
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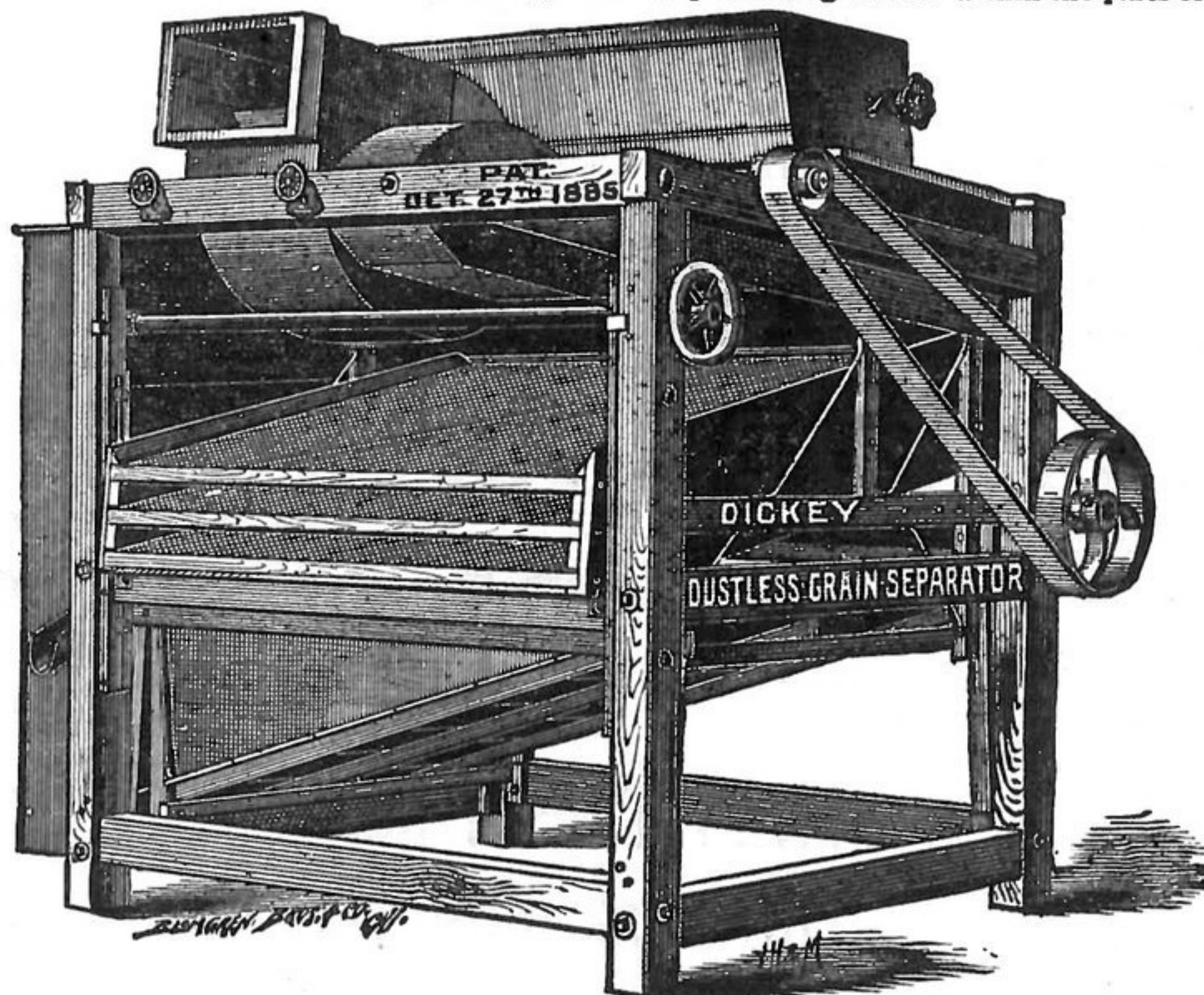
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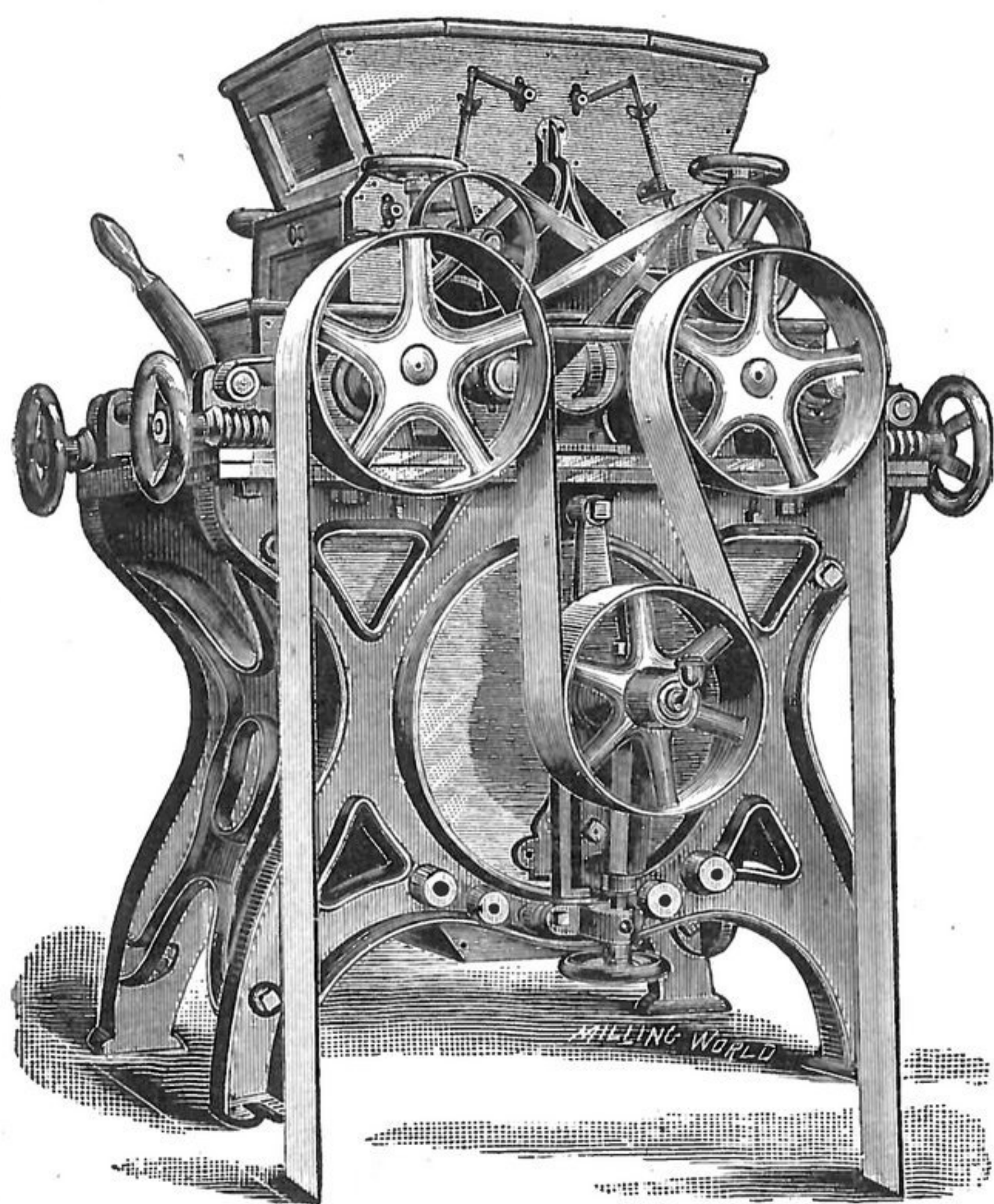


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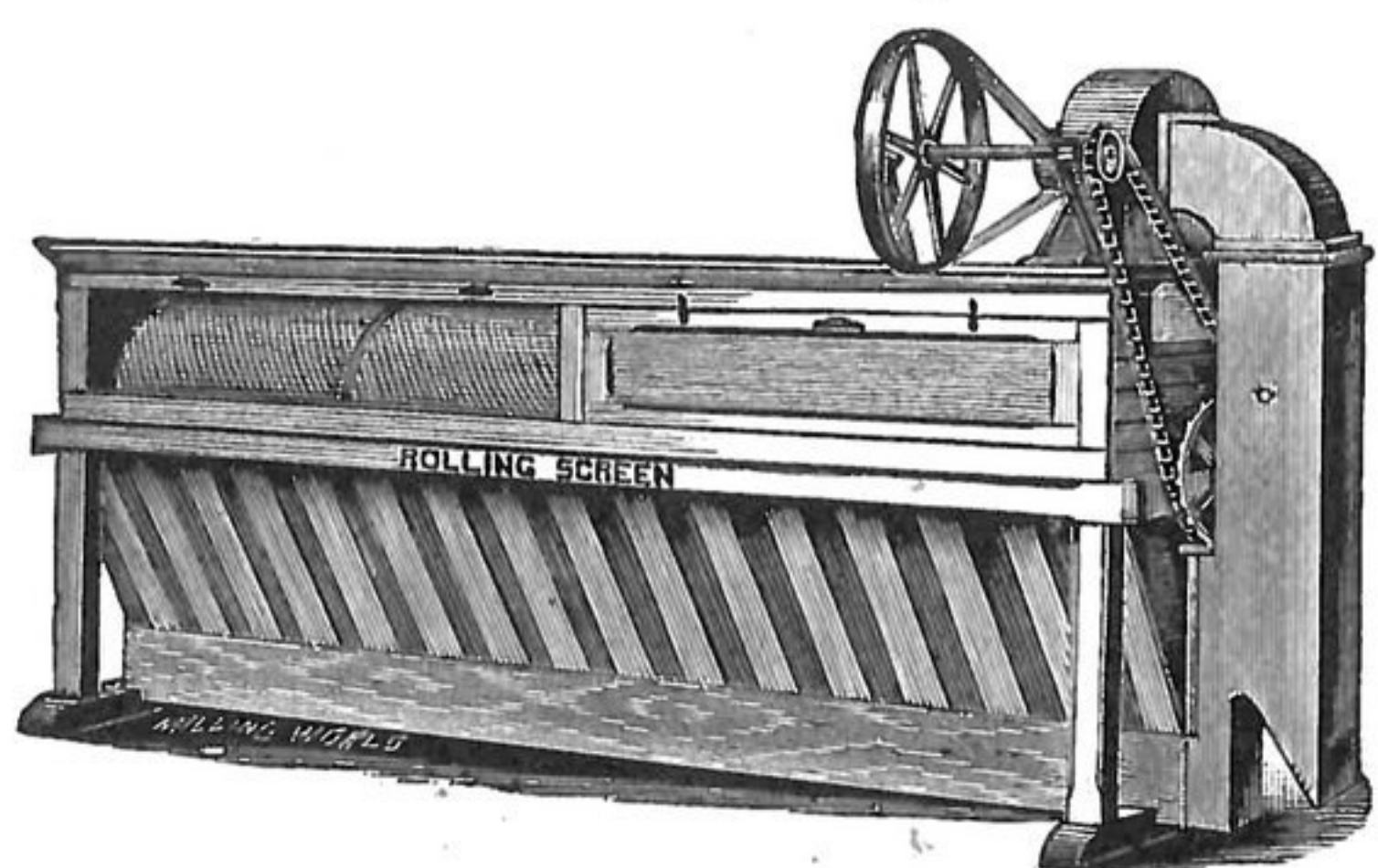
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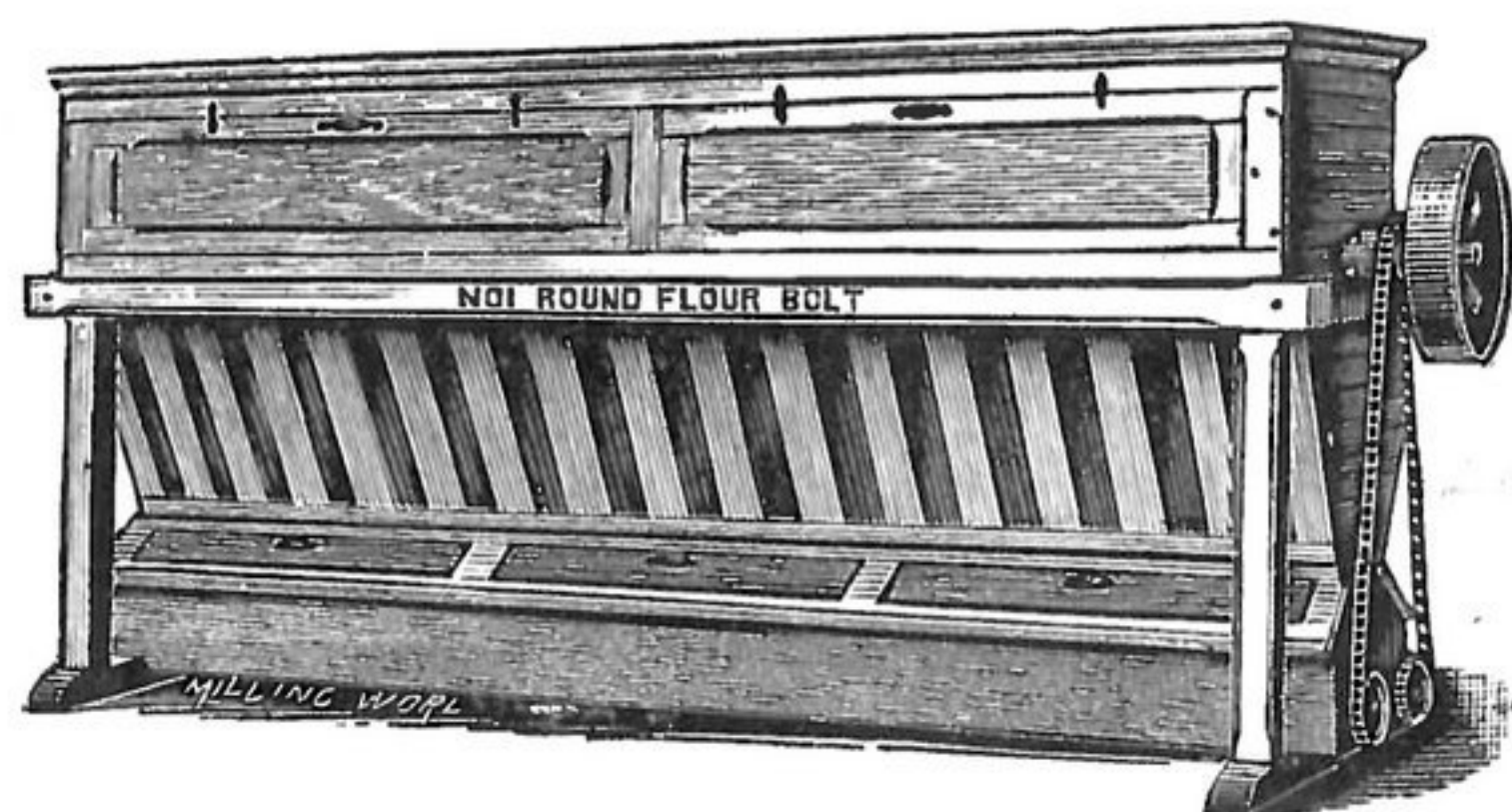
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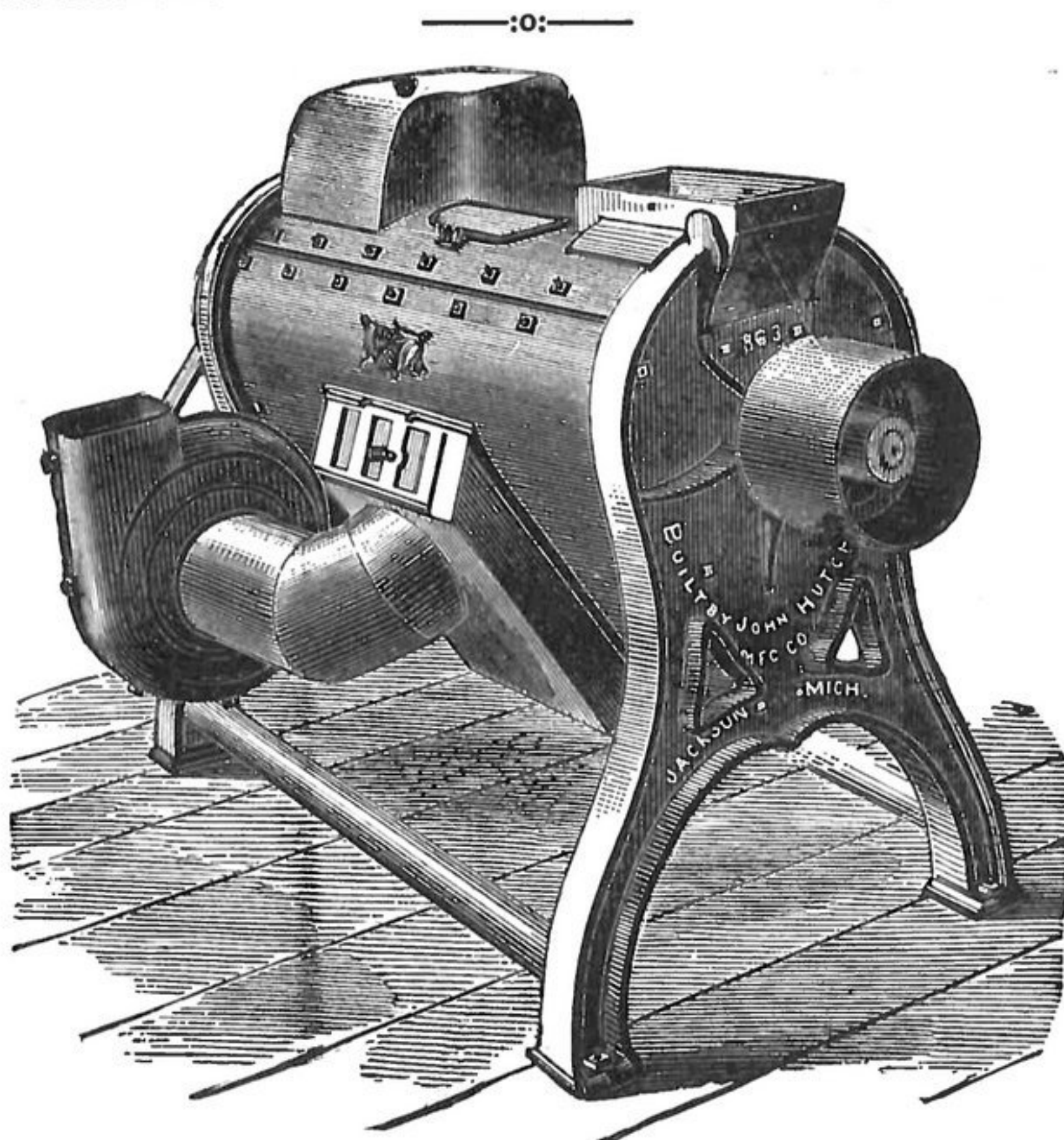


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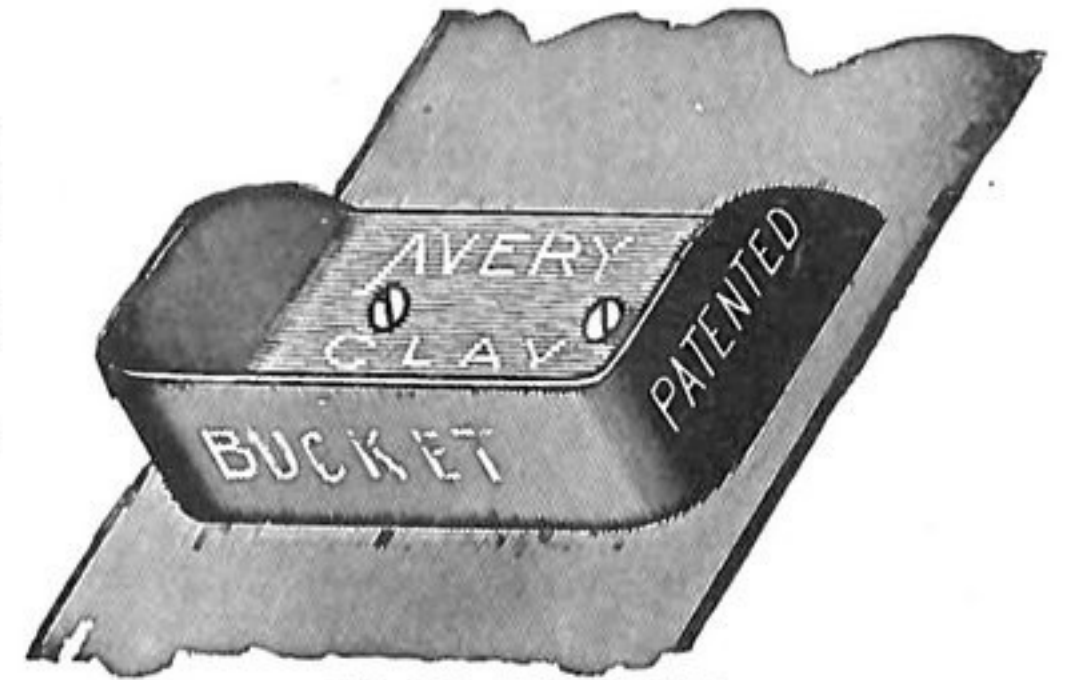
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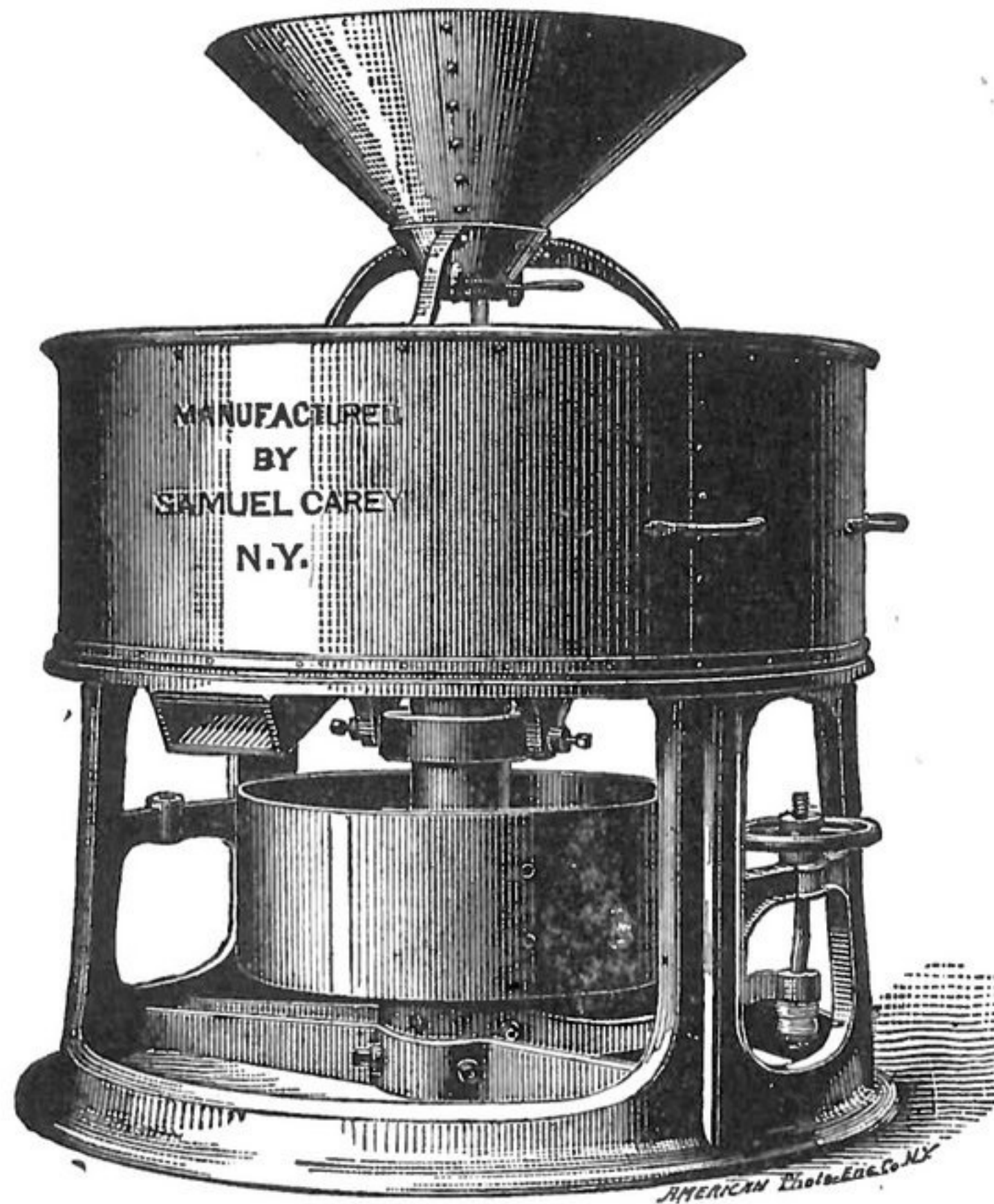
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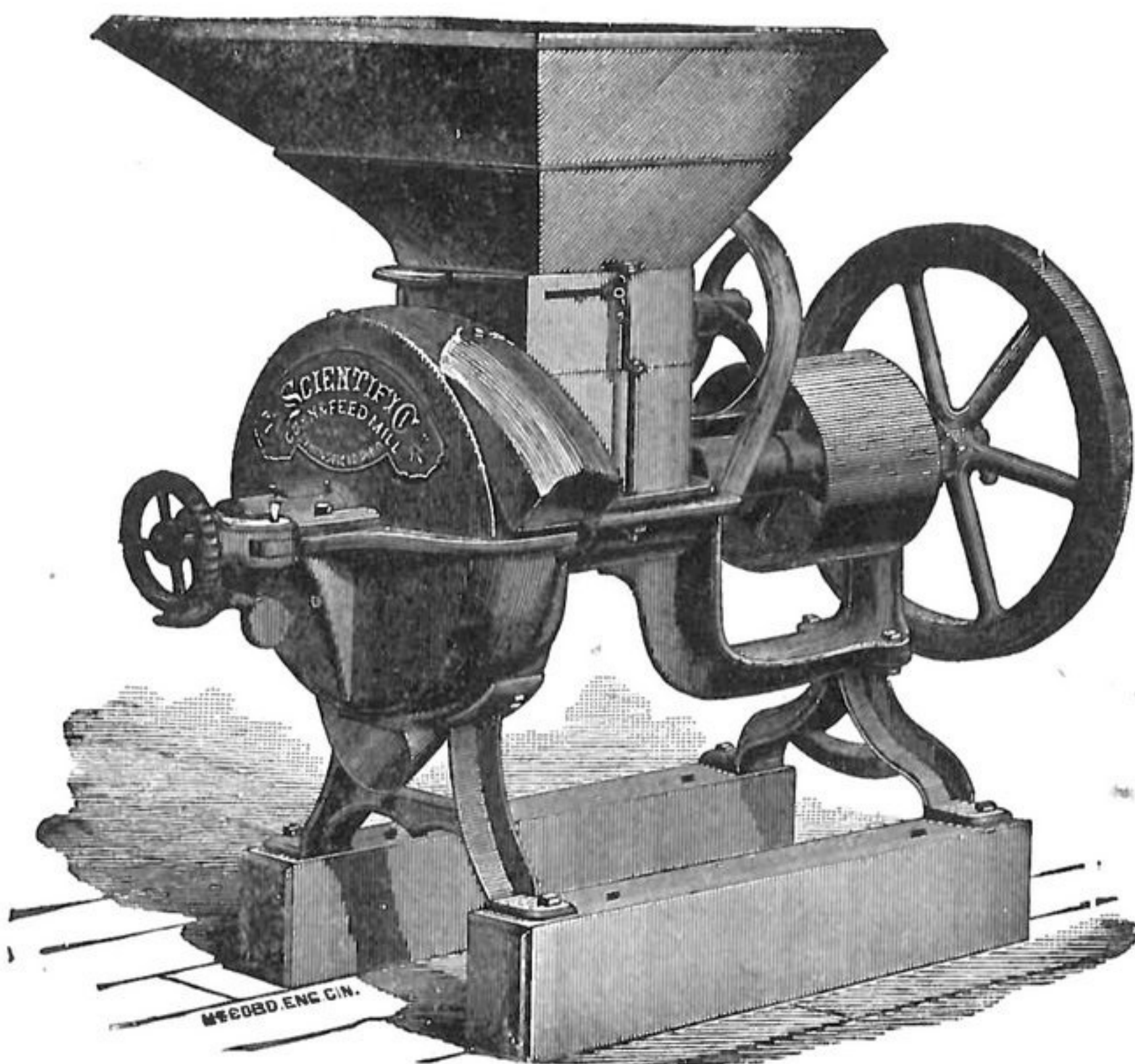
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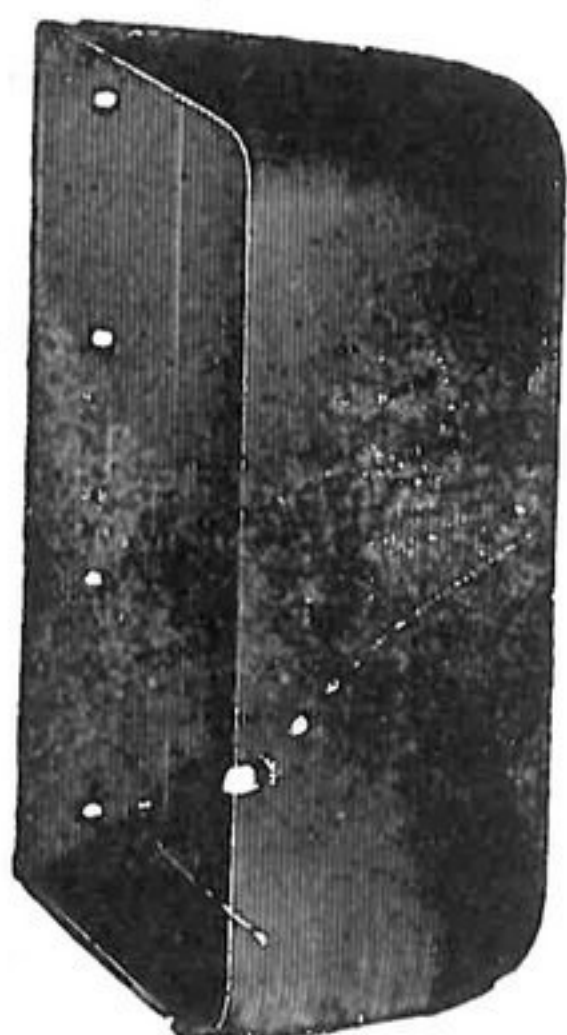
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